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PUBLIC HEALTH

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The Ontario Hospital Services Plan[1]

MALCOLM G. TAYLOR,[2] Ph.D.

THE National Hospital Insurance Program represents the most significant action relating to the public health ever to be approved by the Canadian Parliament. By a unanimous vote of its members, representing four political parties, it decided that hospital care of all Canadians, despite any constitutional allocation of primary responsibility to the contrary, was indeed a matter of national concern, and that national financial resources should be allocated for hospital care purposes. The importance of this decision for the public welfare of Canada is inestimable, and we shall not need to blot many new pages of history before its contribution is universally recognized.

In our discussion of program design and evaluation, it is worthwhile to examine the Ontario Hospital Services Plan as part of the national program. In doing this, the essential elements in its design and some of the criteria by which it may be evaluated will be noted.

The design of a program begins with an objective, and the objective is determined as a result of an indicated need. In most public health areas, I would take it that indications of need are typically more evident to the public health specialists than to the public generally. But as public health programs move to preventive medicine and from preventive medicine to personal health services, the indications of need are more likely to come from the public than from the specialists. Certainly this is the experience in Canada with respect to proposed measures of social action that we call health insurance. Political party proposals for a national program of health insurance have been with us since World War I, and no less than nine Royal Commissions and legislative inquiries have recommended its adoption. The high point in public interest was reached in 1943–45 when the federal government offered to share in the

[1]Presented at the annual meeting, Canadian Public Health Association, May 21, 1958, Vancouver, B.C. as part of a symposium "Program Design and Evaluation".

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costs of comprehensive provincial programs covering medical, hospital, diagnostic, dental, pharmaceutical, and nursing benefits, an offer which, because it was linked with proposals for fundamental changes in the tax structure, was not acceptable to all the provinces.

Now every public health program, like every governmental program, has its technical, social, political, economic and administrative aspects. Programs have a specialized scientific technique; they must be financed; they must be administered; they are directed to the achievement of social goals; and they are political in the sense that they are part of the process by which a free people governs itself in the context of a democratic society. Health insurance, too, has all of these aspects, but a major difference between it and other health programs appears to be the greater relative consequence of the non-technical aspects, a reflection not only of the public's interest in and demand for the program, but, as well, of the impact of the operating program on that same public.

The implications for hospital care insurance of this great public interest are highly important, for the public has strong views on the non-technical aspects (some of the public may even have strong views on the technical aspects) and in the over-all design of the program the public's views on the social, political, financial, and administrative aspects may rank with the health specialists' views on both the health objectives and the technical means of reaching them.

Moreover, as we know so well, there is not one public, but many publics, most of them well organized to express the views they hold. These publics may be divided roughly into two groups—those receiving the services and those providing them. While these two broad categories approach the program from different directions, they do, in fact, meet on an extraordinarily large area of common ground. The ideal to which both subscribe is "high quality services readily available". If anything, the consumer groups have a greater interest in this ideal than do those providing the service, although as in so many areas of our economy, those who provide services are also among those who receive them. Doctors and nurses also become patients.

Among the groups providing the services, a great deal of thought has been given to the subject of health insurance, and, guided by their long experience, medical and hospital associations have hammered out substantial statements of principles to guide the development of such programs. Nor have these groups only spoken on this subject; they have also sponsored prepayment plans of medical and hospital benefits. Obviously, these principles and this accumulated body of experience have great influence on any program design in Canada.

In addition, a host of other factors have potential influence on the shape of a program, and I suggest only a few for illustrative purposes: our constitutional division of provincial and federal responsibilities; the extent of the interests of the provincial health officials in health insurance; the government's facilities for research and planning; the views of treasury officials; the minister's enthusiasm for the project; the Prime Minister's views; the political leaders' understanding of administrative requirements; the terms of reference and membership of committees to which responsibility may be given; the

official and unofficial consultants; the skill in drafting statements; the advice of national officials; the skill and relationships of legislative draftsmen; the quality of legislative committee discussions; the temper and sophistication of newspaper editorials; the nature of the administrative agency.

Also important are other government activities, and the government's assessment of the scope of the health insurance program in relation to them. These two may be of real consequence, for among the various functions performed by the provincial governments in Canada, there are few requiring greater financial outlay, and probably none presenting administrative tasks of greater complexity than does hospital insurance. These and other similar factors inevitably influence the design. As one surveys the programs launched and being launched in Canada, one cannot help being impressed by the standards of excellence that have been reached.

It is not always possible for the researcher to retrace the design-pattern followed by governments in establishing a new public policy. The researcher may know from whence a government policy started and where it arrived. But he may not know the route it took, nor the reasons for taking it. Fortunately, in the development of the Ontario program, most of the facts seem to be publicly available. In the presentations to the federal-provincial conferences, in the published inter-governmental correspondence, in the remarkable verbatim account of the proceedings of the Health Committee of the Legislature, and in a large number of extraordinarily frank press interviews, the factors in design are either very apparent or can be readily deduced.

The Objectives

While studies of health insurance have been periodically undertaken in Ontario since 1943, it was in 1954 that planning for the present program was begun. This planning was undertaken against the background of the 1945 Federal Proposals, the 1948 and 1953 Health Grants, and with knowledge of the successful pioneering of hospital services plans by Saskatchewan, British Columbia, Alberta and Newfoundland. At that time, two-thirds of the population of Ontario had some amount of voluntary hospital insurance, 45% had some degree of protection against surgical costs, and one-third against medical costs. It might therefore have been argued, on both economic and health grounds, that medical services should be the first public program to be introduced. But, as explained later by the Prime Minister at the October, 1955 Conference, "there is not only disagreement (in respect to the provision of medical services) but greater administrative difficulties (in their introduction)".* Accordingly, with the government policy decision not to embark upon a program of medical services, the objectives were narrowed to services based primarily upon the hospital.

The Ontario documents indicate that three factors influenced the general strategy of planning: (1) The most desirable plan for Ontario modified by (2) the kind of program or programs that would be acceptable to the federal government, which in turn would be modified by (3) the program or programs acceptable to the other provinces.

*Proceedings of the Federal-Provincial Conference, October 3, 1955 (p. 26).

Accordingly, the planning for Ontario was directed to the development of a plan which had as its major objectives:

- to make available to all the population more extensive hospital benefits than those currently available, regardless of age, health condition or status of employment,
- to meet the full costs of care, enabling the hospitals to reduce or eliminate their deficits and provide services of improving quality,
- to remove, as far as possible, any artificial financial or administrative distinctions between acute, convalescent, or chronic care, or care for mental illness or tuberculosis,
- to remove, as far as possible, any inducement to enter or remain in hospital for services that could be more economically provided elsewhere,
- to meet to the fullest extent possible the aspirations of the people in this area of need, consistent with the judicious use of public funds, while disturbing existing patterns of practice or insurance arrangements as little as possible.

All of these objectives were to be achieved efficiently, economically, and most important, in accordance with recognized principles of democratic administration.

The "package proposal" that emerged from these considerations for presentation to the October 1955 Federal-Provincial Conference included the following:

- In-patient and out-patient diagnostic services.
- In-patient services in general, convalescent, and chronic care hospitals.
- In-patient care in mental hospitals and tuberculosis sanatoria.
- Home care services.

The first program, out-patient diagnostic services, was proposed not only as a logical extension of public health but also to reduce unnecessary in-patient admissions. Home care services were proposed to make it possible to return patients to their homes at an earlier stage of their convalescence.

In addition, two other programs were proposed to the Conference, in view of the possibility that other provinces and therefore the federal government would not accept a program of such magnitude:

- a program to insure patients against the catastrophic costs of long term hospitalized illness, what we might now call "major hospital expense" insurance.
- a program of maternity and new-born hospital care benefits.

The Ontario government made clear, however, its preference for the comprehensive program.

The resulting federal offer, as is well known, included four of the benefits that were contained in Ontario's (and other provinces') proposals—out-patient diagnostic services, active treatment, convalescent, and chronic care hospital benefits. It did not include three of those proposed—the home care, mental hospital, and tuberculosis sanatoria benefits.

After a re-assessment of what would initially be possible in the light of available facilities and personnel, the Ontario government decided to postpone the out-patient diagnostic benefit, and the home care benefit, but to include the mental hospital and sanatoria benefits.

The Means

Lack of space precludes here an examination of all the administrative policy

decisions to give effect to the objectives contained in the legislative policy. In summary, the major decisions were as follows:

Provincial Financing. In the light of the British Columbia experience, strong administrative arguments can be marshalled for the use of the retail sales tax to finance hospital care insurance, but the method of financing is one of the outstanding examples of an earlier point, that factors other than those strictly related to program may take precedence in a policy decision. Ontario's view was that the sales tax should be reserved in the event that other pressing demands may be made in the future on the provincial government and for which the premium method of tax collection would not be suitable. Accordingly, financing of the hospital care program by the premiums method was decided upon.

In addition, the provincial government undertook to continue three existing expenditures at their same relative level: (a) an amount of approximately $18 million representing current payments to hospitals for various programs including indigent care; (b) mental hospital costs; (c) tuberculosis sanatoria costs.

The responsible agency. The Canadian political system requires that all governmental agencies be ultimately and directly responsible through a minister to the legislature. The traditional form of administrative agency is the department but in recent years we have experimented with many variations including boards, commissions, and corporations. Because hospital insurance requires the provision of services by independent agencies, the hospitals, and by self-governing, independent professions, it was considered desirable that they have a responsible voice in administration. Accordingly, it was decided that the agency should be an independent body corporate, called the Ontario Hospital Services Commission, composed of members having long association with the interest groups most concerned. At the present time, four Commissioners are former members of the Ontario Hospital Association, one a member of the Executive of the Ontario Medical Association, and one an outstanding Labour leader. There is one vacancy. Liaison committees with the various professional groups have also been appointed. The Commission is responsible, of course, to the Minister.

The Administration. Hospital insurance is a complex operation and the prospect of insuring five and one-half million people a formidable administrative task. The use of the Ontario Blue Cross organization with its 2.3 millions already insured, and its vast administrative experience, was an obvious choice as the administering agency. At an early stage, negotiations with the Ontario Hospital Association were commenced and an arrangement satisfactory to both parties was agreed upon. It provided for the transfer of practically all Blue Cross employees and the necessary equipment to the Commission, with the Blue Cross continuing in the field for the purpose of making available a contract covering semi-private care. Because the Blue Cross no longer has administrative machinery for this purpose, the Commission will make its administration available to Blue Cross, on a cost basis, and the machinery is also available to other insuring agencies in the field who may desire to use it.

Coverage. The objective of the public hospital care program is universal

coverage, but it seemed unwise to risk a breakdown of the entire administrative machinery by overloading it with five and one-half million participants at the beginning. Accordingly, it was decided that the program should be mandatory from the beginning for all employees in employer groups having fifteen or more employees, and be available on a voluntary basis to everyone else, with the mandatory provision being extended gradually to other groups as it becomes administratively feasible to enroll and service them.

Such are the major administrative policy decisions in the design of the Ontario program.

Evaluation

Since the program has not yet been introduced, it will be some time before it can be evaluated. But it is an essential element of program planning that from its inception steps be taken to provide for program appraisal. A program of such magnitude and having such general objectives is not easily evaluated, moreover, it will be rated by different people in different ways. Patients may evaluate it on the basis of one episode, "When I was sick, was I able to get in?" Hospitals may judge it on the basis of their daily rate, or on the amount of paper work, doctors on the demands made upon them for unnecessary admissions, treasury officials by how much it costs.

It is necessary to seek more comprehensive and objective criteria. I suggest a number of major points that should be examined in evaluating such a program in a Canadian province.

Patients. Are sick people able to obtain the hospital care they *need*, and I emphasize *need*, without the financially crippling effect of large hospital bills? In other words, does hospital *demand* more closely approximate hospital *need*, without exceeding it?

Hospital Services. Are hospitals assisted, visibly and measurably, in improving the quality of services they provide, and do they receive in respect of their insured patients the full cost of providing high quality care? Both of these aspects are possible of statistical assessment.

Hospital and Related Facilities. Does the program measurably contribute to the development of an integrated hospital system, with facilities geographically distributed where they are required in quantity sufficient to meet the needs of a rapidly expanding population? And does it successfully encourage the development of requisite specialized facilities for diagnosis, and convalescence, and in those long-neglected areas of chronic care and rehabilitation?

Personnel. Does the program contribute to the recruitment of more competent personnel to the hospital field, in numbers sufficient to meet expanded needs and of a quality to improve service?

Education. Does the program assist schools of nursing in improving their curricula, and increase the educational content of the nurses' training? Does it contribute to medical education not only by improving facilities but by continuing and expanding the supply of teaching patients? Does the program assist in the training of the requisite auxiliary or para-medical staff?

Public health program. Is the program an integral part of the public health

program and are the objectives of public health and the functions of other public health workers at all times assisted by its administration?

Costs. Are the costs of the program reasonable, consistent with the meeting of essential needs, rising standards of care, and reasonable remuneration for workers? And supplementary to that, what is the impact on other public programs? Is the amount of public funds channelled to the hospital program kept reasonable so that other essential services, particularly education, do not suffer from undernourishment?

Responsibility. Does the program function in such a way that all the groups associated with and affected by it act responsibly, forthrightly and willingly? Do advisory committees take their work seriously? Is their advice clearly in the public interest and not merely of a nature calculated to perpetuate selfish vested interest? Is their advice heeded? Do patients, doctors and hospital admitting officers exercise individual and joint control over unnecessary admissions, and unnecessarily prolonged stay? Do insurance plan administrators give positive, imaginative leadership and avoid laying on the stultifying hand of bureaucratic control? Do hospital boards and hospital auxiliaries act with the same enthusiasm in their essential capacities? Does the program stimulate voluntary action, rather than dry it up?

The Spirit of our people. This is the most important assessment of all for this is a program to meet human needs, its major purpose to facilitate the provision of services by professional people to other people in need. It is a program where success or failure is related to human behaviour, and the impact it may have on that behaviour is important not only for this program but for all phases of our society. There are few social security programs like it. Only a program of physicians' services rivals hospital insurance in the extent to which success is dependent upon the human spirit and personal integrity. Will the program be so administered that there is definite improvement in the health of the public, that there is engendered a public desire for positive health, or will it encourage malingering and a general attitude that "it's smart to beat the system!"? What will be its effect on the health professions? Will they feel that the program is, in fact, as it is designed to be, a major support to them in the accomplishment of their high purpose? Will they respond positively to this great public declaration of faith and confidence in what they have to offer? And finally, what is its impact on our democracy? Will it, like universal public education, help to strengthen our institutions of democracy? Will it bolster our faith in the capacity of free men to govern themselves in a free society and so to manage their affairs that fundamental needs are met and legitimate aspirations achieved?

These are among the fundamental questions that must be asked of a social experiment on so grand a scale. They require affirmative answers if we expect the next generation to say, "Theirs was a noble purpose, a magnificent design, a faithful performance."

Heredity, Health, and Radiation[1]

H. B. NEWCOMBE,[2] Ph.D. and A. P. JAMES,[3] Ph.D.

IN spite of the attention which has been directed to the problem, there is still widespread misunderstanding concerning the consequences of exposing human reproductive tissues to ionizing radiation. The confusion has been perpetuated largely by the conflicting utterances of alarm and of reassurance appearing in the popular press. Present assessments of the genetic effects of radiation are adequate for putting the matter into reasonable perspective even though they can be relied upon only within very wide limits.

The reasoning starts with the fact that a proportion of our present illnesses and handicaps are of hereditary origin and have resulted from natural causes operating over past generations. Exposure to man-made radiations may increase the incidence of some of these diseases but will not cause new kinds of diseases to appear. Thus, it is important to know how much of our present illness is hereditary. The problem of the future genetic effects of man-made radiation has in this manner served to direct attention to present hereditary disease and predispositions to disease as a public health problem.

How much hereditary ill-health is there at present?

With regard to those types of disease which have an obvious genetic component, there is now quite close agreement between estimates derived independently for Denmark (1), Northern Ireland (2), the United States (3), and Great Britain (4, 5); at least 2 to 3% of the population suffer from serious hereditary illnesses and handicaps, and approximately 4% of all individuals born are so affected at some time during their lives.

For present purposes it is sufficient to indicate some of the broad categories of disease involved in the above estimates. Of the cases of severe mental deficiency (combined incidence about 1 in 500 of the population) approximately half are due to hereditary causes. Examples include: acrocephaly, microphthalmos, gargoylism, amaurotic idiocy, cerebral diplegia, phenylketonuria, microcephaly. Severe sensory defects have a combined incidence of about 1 in 300 of the population; among these, approximately three-quarters of the blindness occurring before the age of 15 and about half of all cases of blindness, together with many cases of deafness and about half of the cases of deafmutism, are due to hereditary causes. Deformities such as pyloric stenosis, spina bifida, hydrocephalus, anencephaly, hare lip and cleft palate, clubfoot, patent ductus arteriosus, congenital dislocated hip, osteogenesis

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[1]Presented at the annual meeting, Canadian Public Health Association, May 20, 1958, Vancouver, B.C.

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imperfecta (the collective incidence of the examples cited being well over 1 in 100 of the population) have, in an appreciable proportion of cases, a hereditary basis. A number of the commoner functional diseases, such as diabetes mellitus, idiopathic epilepsy, periodic paralysis, target cell anaemia, retinitis pigmentosa, albinism, and haemophilia, are likewise largely hereditary in origin (the collective incidence of the examples given being approximately 1 per 100 of the population). In addition, hereditary factors appear to contribute significantly to stillbirth and to infant death.

The figure of 4% of all births represents an underestimate of the hereditary component of ill-health. It excludes on the one hand some very common and severe conditions such as coronary thrombosis, gastric and duodenal ulcer, and rheumatic fever, all of which show distinct family groupings, but which are not inherited according to any simple pattern. Likewise excluded are the numerous but less severe deviations from the normal, for example in birth-weight, stature, longevity, and intelligence, which are known to be influenced by a combination of hereditary and environmental factors.

How much is due to natural mutations?

At least a part of this present load of hereditary defects owes its continued presence to the repeated occurrence of natural mutations in cells of the reproductive tissues.

There is little doubt of the importance of mutations in the case of certain of the more severe dominant traits such as retinoblastoma, the common form of achondroplasia, and multiple polyposis of the colon, where the condition is usually expressed when the defective gene is present, and where there is a distinct reduction in the likelihood that the affected individuals will reproduce. According to recent estimates, about 1% of all newborn individuals will be afflicted with defects of this general kind. It is evident that any increase in the mutation rate would result in a corresponding increase in the incidence of such conditions.

Much less certainty is felt concerning the part which mutation plays in maintaining many of the other hereditary conditions which are either recessive (expressed only when inherited simultaneously from both parents), or are irregularly expressed dominant (affecting only a proportion of those who inherit it from one parent). At least one disease (sickle cell anaemia) is known in which those who inherit the gene from a single parent, not only suffer no ill effect but are actually benefited (being resistant to malaria). Thus, where evidence is lacking, it is impossible to be certain whether a disease owes its prevalence to recurrent mutation, or to an increased fertility in the seemingly unaffected carriers sufficient to keep the defective genes common in the population in spite of a reduced fertility in the affected individuals themselves. For most hereditary diseases, the relative importance of these two possible causes, mutation and fertility differentials, is simply not known. (Nor do we know the extent to which medical advances may be acting to reduce the elimination of defective genes by permitting the affected individuals to reproduce.)

It follows from this that spontaneous mutations are responsible for a part

of the present load of hereditary defects, amounting to not less than one seriously affected individual per 100 births, and probably not greatly in excess of four times this number. As noted earlier, this neglects some common and severe conditions, together with the less striking quantitative variations, both of which are in part influenced by hereditary factors. The above range could thus under-estimate the effect of mutation, but it is unlikely that it over-estimates the effect.

How much would radiation increase it?

Radiation-induced mutations have now been studied intensively in a wide range of organisms over more than a third of a century. A number of generalizations are therefore possible. (1) The majority of mutations which have individually recognizable effects are harmful. (2) The number produced by radiation varies in direct proportion to the exposure. There is ample reason to believe that this simple relationship extends even to very low doses where direct experimental proof becomes increasingly difficult and expensive. (3) There is no indication that any organism is immune.

From very laborious experiments with large numbers of irradiated mice, it appears that about thirty roentgens are required in the pre-reproductive period to double the number of mutations. The possible error in applying this value to humans might be threefold in either direction, but is probably not any greater.

Thus, the likely effect of exposing a human population to 30 roentgens in each generation prior to reproduction would be an eventual doubling of the incidence of those defects which are normally maintained by recurrent natural mutations. However, in view of the uncertainties indicated earlier, the number of additional individuals having severe hereditary defects would probably equal not less than ⅓% and not more than 12% of all births (i.e. a probable 2%, with an uncertainty of sixfold in either direction).

Any additional uncertainties are such that the lower value stands as a reasonably firm limit, while the upper value might conceivably underestimate the true consequences.

If just one generation were exposed, only a part of the genetic damage (perhaps one-tenth of it) would be expressed in the immediate descendants, the remainder being spread over many succeeding generations. Although this would tend to obscure the consequences, the total number of seriously affected individuals would not differ from that which would appear in any one generation under the conditions of continuous irradiation.

Since the number of induced mutations is to the best of our knowledge strictly proportional to the radiation dose, it follows that exposure of large populations to even very low doses may result in a considerable number of seriously affected people.

Our present task is to put the probable magnitude of such effects into reasonable perspective.

How much radiation are we receiving, and what is the effect?

From natural sources of ionizing radiation (cosmic rays, radium, potassium-40, and carbon-14) we receive approximately 3 roentgens to the reproductive

tissues in 30 years, i.e. prior to the average age of reproduction. From all medical uses of radiation (including radiography, fluoroscopy, and therapy) individuals in North America probably receive an average additional exposure of 3 roentgens in the same period, so that the total is approximately twice as great as the natural exposure alone (6). A further exposure from the fallout of radioactive materials from nuclear weapon testing will be approximately 0.1 of a roentgen in 30 years if the tests continue at the same rate as they have over the past five years; this latter figure may be in error by as much as five-fold in either direction (3), but more precise estimates will undoubtedly be available in the near future.

The expected number of severely affected people resulting from an exposure of 3 roentgens per generation is probably in the vicinity of 0.2 per hundred births. The corresponding number from 0.1 roentgen per generation is 0.007 per hundred births. For the reasons given earlier, the true figures are unlikely to be less than one sixth, or more than six times, these values.

Perhaps one area in which this reasoning most needs to be applied is in relation to chest X-rays, concerning which there has been some public controversy. On this continent chest X-rays are more numerous than all other radiological procedures put together (dental X-rays excepted). In spite of this they account for only about one-fortieth of the total gonad exposure of 3 roentgens per 30 years from the medical uses of X-rays (6, see Table 4). Let us suppose that one had to decide upon the merits of a program of chest examinations which would involve 1,000,000 people and would result in a gonad exposure of 1/1,000 of a roentgen to each of them. This is the expected average gonad exposure to males and females from mass chest X-rays where maximum precautions are taken. Where such precautions are not taken, the dose can be as much as six times as high (7, see Table 5). On our previous reasoning the genetic effects of this exposure would result in not less than 0.1 and not more than 4 seriously affected individuals. Against this would be balanced the anticipated benefits in terms of both the decreased mortality from tuberculosis (which would result from the discovery and treatment of a larger proportion of cases) and the increased control which would be exercised over the spread of the disease. While recognizing the danger that such calculations may appear to be more accurate than they really are, it would nevertheless seem that a decision which is based on such objective aids is likely to be better than one which ignores them.

To avoid any mis-interpretation of this example it should be emphasized again that the genetic effects which we are considering here would be expected to show up only in the descendants of the exposed individuals, and not in these individuals themselves, the bulk of the expressions being distributed over perhaps ten generations or so. The authors are not qualified to assess the anticipated benefits from such a program of chest X-rays, but such an assessment should, of course, be carried out.

Much of the misunderstanding concerning the genetic hazard of radiation stems from the fact that where large populations are involved estimates of this kind look small if stated as percentages, and large if stated as absolute numbers. For example, if we think in terms of a population which has about one hundred million births per generation (e.g. that of North America), medical

exposures and fallout might be estimated to result respectively in 200,000 and 7,000 seriously affected people per generation (i.e., 0.2 per hundred births and .007 per hundred births) assuming that the present rates of exposure continued indefinitely. If the same reasoning is applied to a future world population in which it is assumed that there are 2,500,000,000 births per generation, even the very low dose of 0.1 roentgen per generation would be expected to result in something like 170,000 severely affected individuals per generation. In each case, of course, the true number might be only one-sixth of the probable figure, and it might also be six times as great.

It is this paradox which has permitted at one and the same time the reassuring statement that the hazard is small, and the alarming statement that a very large number of people will be severely affected. Both statements have unfortunately played their part in perpetuating an unnecessary and unscientific kind of controversy.

Since the future will undoubtedly make rapidly increasing use of very potent sources of radiation, there will be a corresponding need for sound judgment concerning the levels of radiation to which human populations can justifiably be exposed (in view of certain needs or anticipated benefits). To this end it is important that the present very tentative estimates of the probable harmful effects be improved by means of appropriate research into the genuine sources of uncertainty. It would be particularly unfortunate if we were to allow our energies to be diverted from this task by controversies which are largely semantic in origin.

Unsolved problems and a method of study

The foregoing kind of estimate of the genetic damage from man-made radiations might be termed an "informed guess". Certainly the limits are too broad for such estimates to be described as accurate scientific information, and there is much greater uncertainty than one would wish concerning the limits themselves, and particularly in the stated upper limit. Also, much of the information used in the calculations has of necessity been derived from research on insects and small mammals. Although we know that the basic mechanisms are the same in all organisms, such extrapolations can impose gross errors of magnitude. In particular, it should be noted that the most serious gaps in our present knowledge relate to certain fairly elementary aspects of human population genetics.

Except in the case of those traits which have simple patterns of inheritance, we know much less than we should about the various ways in which genetic causes can operate to affect human health. Especially, we lack information about the respective roles of mutation and of selection (the latter, in the sense of fertility differentials) in maintaining and perpetuating our present load of hereditary handicaps. Probably the major source of uncertainty concerning the extent of the hereditary effects of radiation stems from this latter fact.

Although the technical problems involved in genetic studies of human populations are great, these populations do possess some attributes which are of special advantage to the investigator and which have not been fully exploited. Chief among these is the fact that each individual has a name and is identifiable. Further, an individual's immediate ancestors and descendants

are for the most part identifiable. These facts make it possible for the population to be separated into component families, an essential feature of any genetic study.

In the past, genetic information concerning humans has been obtained very largely by means of personal interviews and special surveys. It is noteworthy that in spite of the labour involved in such methods, the Danish genetic registry has pedigrees of the families of individuals carrying hereditary diseases, embracing about 20% of the Danish population. There is, however, a practical limit where large populations are involved, to the family relationship data which can be obtained by these more conventional methods.

Also, it is apparent that a new source of information is becoming more readily utilizable. This source derives from the modern practice of recording all vital events routinely. These records constitute, for all but recent immigrants, essentially complete information concerning the fine structure of family relationships within the population. Thus, we already have, in essence, a family tree on a large scale complete with the dates of all marriages, births, and deaths, and a certain amount of sociological information. In addition, there are very numerous routine records relating to health which are likewise identified with specific individuals.

The potential importance of such routine sources of information is emphasized by several considerations. One of these is the increasing completeness and reliability of the vital records, together with the more accurate diagnosis and recording of disease. A second is the advent and the rapid extension of modern data-processing methods. Finally, it should be pointed out that with the decreasing incidence of bacterial and virus diseases, the hereditary component of disease has become one of the major public health problems.

The obvious question, as to the technical feasibility and cost of making fuller genetic use of the existing routine records, cannot be answered before considerable work has been done on the design of detailed handling procedures and on the planning of an appropriate research program of test studies (9, 10, 11). Such studies can, in fact, be planned on a fairly modest scale, and a specific proposal for one series of studies has been drawn up in detailed form (8). A small preliminary test which has already been carried out, and the calculations based on it, give reason to believe that what has appeared in the past to be the most serious technical obstacle (i.e. inaccuracies in the identifying information contained in the vital registrations) can to a large extent be circumvented by appropriate handling methods. Thus, at present the extraction of family data from such records would appear to represent a promising field for research on the part of geneticists, demographers, and public health authorities.

The proposal to extract family statistics from individual records is not, in itself, unique. The concept was envisaged at the time when Canada's National Index of Births, Marriages, and Deaths was established (12, 13). Still more recently, in discussing the statistics which might be drawn from the registrations of individual vital events, it has been emphasized (14), that:

> "To serve the statistical needs of public health, it is time we broadened our concepts to include statistics on the family as a unit as well as on the individual."

The techniques which have been proposed are, however, uniquely Canadian, having been designed around Canada's National Index of Births, Marriages, and Deaths. This facility already performs routinely some of the required operations, and thus makes possible the carrying out of development studies in Canada with an economy of effort which is unlikely to be matched elsewhere.

Summary

About 4% of all individuals born will suffer at some time during their lives from serious defects in which heredity plays an obvious and major part. It is now believed that something between a quarter and the whole of this present "load" of hereditary defects is directly maintained by the rate of naturally occurring new mutations in each generation. The new mutations presumably make up for the defective individuals who die young or who fail to reproduce. The frequency of the conditions which are mutation-maintained will increase with any rise in the level of ionizing radiation. Present levels of exposure resulting from the medical uses of X-rays average about 3 roentgens per generation per person in the population, and might eventually increase the load of hereditary defects by as much as 10%. The genetic effect of "fallout" from nuclear weapon testing is probably about one-thirtieth of this. While the "fallout" effect appears small if expressed percentage-wise, it will nevertheless seem large if expressed as absolute numbers of seriously affected individuals per generation in a world population of 2½ billion people. Uncertainties in the calculations are considered. One of the chief of these stems from our ignorance concerning the respective roles of selection and mutation, in maintaining our present load of hereditary defects. A method is discussed by which we might obtain the necessary insight into the operation of these two factors to influence the genetic component of population health and well-being.

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RÉSUMÉ

Environ 4% des individus seront frappés à un moment donné de leur vie par des affections sérieuses où l'hérédité joue un rôle majeur et visible. Il est admis à présent que, parmi ces défauts héréditaires, au moins un quart est dû à la fréquence des mutations naturelles produites dans chaque génération. Ces nouvelles mutations sont probablement responsables des individus qui meurent jeunes ou qui ne se reproduisent pas. La fréquence des conditions mutagènes augmente avec chaque accroissement du niveau des radiations ionisantes. Le niveau actuel d'exposition, résultant de l'usage médical des rayons X, est en moyenne d'environ 3 roentgens par personne et par génération. Ceci pourrait augmenter les défauts héréditaires au taux de 10% au maximum. L'effet génétique des poussières radioactives en retombée (fall-out) résultant des essais d'armes atomiques, est probablement de 1/30 de ce niveau. Toutefois, même si ce facteur apparait minime exprimé en pourcentage, il est considérable si l'on calcule le nombre d'individus sérieusement atteints par leurs effets dans une population mondiale de 2½ billions. Parmi les facteurs d'incertitude dans le calcul de ces pourcentages, il faut prendre en considération d'abord le rôle de la sélection et de la mutation dans le maintien de ce fardeau héréditaire. Une méthode est discutée pour l'appréciation de ces deux facteurs et de leur rôle respectif dans l'influence de la composante génétique sur la santé publique et le bien-être des populations.

DR. F. MONTIZAMBERT: CANADA'S FIRST DIRECTOR-GENERAL OF PUBLIC HEALTH

Remarks of Dr. Montizambert in moving a resolution of thanks to the Patron of the Association, H.R.H. the Duke of Connaught, Governor-General of Canada at the Congress of the Association, December 1911.

I doubtless owe the privilege of moving the resolution to the fact that mine is the longest official career as a sanitarian of any in Canada, dating as it does from before Confederation, having been appointed to the Public Health Service of this country by Sir John Macdonald in May, 1866. For some years after that I had to fight the battle of progress in sanitation well nigh, if not altogether, single-handed. It was not until sixteen years afterwards, in 1882, that the first Provincial Board of Health was organized for Ontario, and not until five years later, in 1887, that one was organized for this Province of Quebec, with headquarters in this city under the presidency of that eminent sanitarian Dr. Lachapelle, which presidency to the great good fortune of the country continues to this day.

Now there are such Boards of Health in every one of the nine provinces of this Dominion, countless municipal boards of health, and there are many, many willing workers; and the enormous advance has been made of recognizing the importance of public health by our universities in the establishment of chairs in hygiene, and the giving of diplomas in public health under professors of such renown as our esteemed president.

From: The Public Health Journal, 1912, Vol. 3, page 8.

Neutralizing Viral Antibodies in Eastern Arctic Eskimos

J. A. HILDES, J. C. WILT and W. STACKIW[1]

THE past experience of a community with certain diseases is reflected in the incidence of specific antibodies. Greenberg and Blake (1) have reported on the incidence of antibodies to some pathogenic bacteria in the Eastern Arctic. Paul (2, 3) and his colleagues have used such studies to demonstrate community experience in northern Alaska. Antibodies to poliovirus types 1 and 3 were studied by Wood (4) *et al.* in the Eskimos of the Cumberland Sound area of Baffin Island.

As part of the 1957 annual survey of the health of the Eastern Arctic Eskimos carried out by the Indian and Northern Health Service of the Department of National Health and Welfare, approximately 240 blood samples were collected from various communities, mainly on Baffin Island, to provide more information on virus diseases in these Eskimos. The incidence of complement fixing antibodies in these sera to influenza A and B, adenovirus and psittacosis, representing relatively recent infection with the respiratory group of viruses, has been reported (5). The present report of neutralizing antibodies to the Echovirus, adenovirus, polioviruses and herpes simplex virus is concerned with antibodies which are usually considered to remain circulating in the blood stream for life, although with some diminution in concentration over the years.

Methods

Antibody tests were carried out on blood collected, separated and stored as previously noted (5). The sera were tested at 1:4 dilution for neutralizing antibodies to each of Echovirus types 6 and 9, adenovirus 3, poliovirus types 1, 2 and 3, and herpes simplex virus, using human amnion cells as the tissue culture medium (6).

Results

The samples were divided fairly evenly between the sexes in all communities but the age distribution was uneven, only 10 samples were from subjects younger than 15 years.

Antibodies to both Echovirus types 6 and 9 were found in all communities. The overall incidence of antibodies to Echo 6 was 56% and to Echo 9 37%. Antibodies to adenovirus type 3 were also quite prevalent in all groups,

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averaging 62% of the samples taken. Similarly, antibodies to the herpes simplex virus were widely distributed and present in 95% of the samples. To compare the Eskimo communities with the European population of southern Manitoba, sera taken for premarital tests from 100 young adults were examined. Antibodies to Echovirus types 6 and 9 were present in 43% and 52% respectively, and 88% had antibodies to herpes simplex virus. These antibodies were equally prevalent in sera from urban and rural sources.

The incidence of poliovirus antibodies in the Eskimos was lower and more uneven than in southern Manitoba (7). There were nine instances in six communities in which a community had no antibodies to one of the three types, in another eight instances the incidence was 10% or less. Conversely, the three most southerly communities—Frobisher Bay, Lake Harbour and Wakeham Bay—had a high overall incidence. Grise Fiord, the most northerly settlement, is an exception to this apparent geographical distribution but it is an artificial community whose members had been moved from more southerly communities three or four years previously for economic reasons.

The distribution of antibodies by three broad age groups in those communities with 20 or more samples, excepting Grise Fiord, is shown in Fig. 1. The Echovirus, adenovirus and herpes simplex antibodies were distributed more or less equally in the three age groups. Poliovirus 1 antibodies were practically

INCIDENCE OF ANTIBODIES BY AGE GROUPS IN FIVE ESKIMO COMMUNITIES

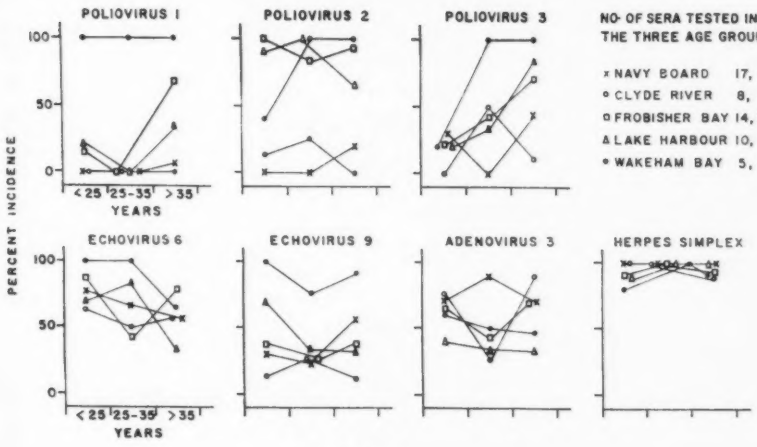

FIG. 1

absent from two communities, present in all sera from Wakeham Bay, and in two communities the incidence was low in the younger age groups and high over the age of 35 years. Similarly, antibodies to poliovirus type 3 showed a rising incidence with age in three communities. This was seen in only one community with poliovirus type 2 antibodies.

Discussion

The presence of Echovirus, adenovirus and herpes simplex virus antibodies in all the communities and the even distribution in the age groups suggest that these diseases are endemic. In the case of adenovirus infection another interpretation is possible from the data obtained in two communities, Arctic Bay and Scott Inlet. The incidence of long-lasting neutralizing antibodies to adenovirus type 3 was compared to that of the short-term complement fixing antibodies previously reported in these same sera (5). The complement fixing antibodies are not type specific. This comparison at Arctic Bay, where eight of the ten sera had both types of antibodies, suggests no previous experience with adenovirus until the community had a type 3 epidemic with an 80% attack rate within the previous year. A similar situation seemed to exist at Scott Inlet. At Lake Harbour the incidence of neutralizing and complement fixing antibodies was also similar but only two sera contained both types of antibodies, indicating that the complement fixing antibodies were in response to an adenovirus infection other than type 3.

In contrast, poliovirus antibodies were less common and more unevenly distributed. This precludes treating the Eastern Arctic as a homogeneous population to be compared with white populations in southern Canada (7), and the small size of the samples from individual communities makes discussion speculative. Wakeham Bay, with over 80% antibodies to all three types, is similar to temperate or tropical communities where poliomyelitis is

TABLE I—The Number of Sera with Antibodies in Eastern Arctic Communities

Community	Estimated Population	No. Tested	Echovirus		Adenovirus	Herpes Simplex	Poliovirus		
			Type 6	Type 9	Type 3		Type 1	Type 2	Type 3
Arctic Bay	170	10	3	3	9	10	1	0	1
Grise Fiord	50	21	5½	6	11	20	11	14	10
Navy Board and Pond Inlet	250	43	28	16	31	43	1	3	12
Scott Inlet	50	11	9	2	10	11	0	0	0
Sanford Fiord and Cape Christian	20	5	3	1	4	5	0	1	1
Clyde River	100	21	12	3	15	20	0	2	3
Kivitoo	40	6	6	1	5	5	1	0	0
Broughton Island	70	15	7	5	7	13	1	1	4
Padloping	30	15	1	4	11	15	4	3	3
Durbin Island	30	10	1	4	5	9	0	1	2
Frobisher Bay	480	42	29	14	24	40	13	38	19
Lake Harbour	280	22	14	11	7	21	4	19	9
Wakeham Bay	100	20	16	18	10	18	20	17	16

endemic (8) or frequently epidemic. The other two communities with a high incidence of antibodies—Frobisher Bay and Lake Harbour—show a reversal of the usual picture in North America in that type 2 antibodies occur in a high proportion but types 1 and 3 antibodies have a relatively low incidence. (table I)

Types 1 and 3 poliomyelitis antibodies seem also to be unevenly distributed by age groups, except when the community has either no antibodies or almost 100% of the population has antibodies. Contrast between these types and type 2, which is more widely distributed, invites speculation concerning the ability of the different poliovirus types to become endemically established in a community. Other differences between types have been noted (9) however, no conclusions can be drawn on these points and further investigation along these lines will be complicated by the growing program of active immunization started since these samples were collected. On the other hand, the fact that samples from many communities contain few or no antibodies to one or more types of poliovirus fully justifies the immunization program.

Summary

Two hundred and forty-one sera from Eskimo communities in the Eastern Arctic were examined for neutralizing viral antibodies. Antibodies to Echovirus types 6 and 9, adenovirus type 3 and herpes simplex virus were found scattered fairly evenly throughout the survey; the percent incidences were 56, 37, 62 and 95 respectively. These diseases are considered endemic.

The incidence and distribution of poliovirus antibodies was more uneven, several communities being free of antibodies to one or more poliovirus type. Antibodies to poliovirus 2 were more common than antibodies to types 1 or 3. The latter virus types are probably not endemic in this region.

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A Three-Year Report on Morbidity in Some Ontario Industries

W. H. H. BISHOP[1]

NUMEROUS reports have been published which present information on the recorded reasons for morbidity absence in industry; less plentiful have been the published reports dealing with the recorded reasons for visits to industrial health centers; a few reports, e.g., that of Meigs published in 1948 (1), have presented both types of information for one or more industries.

The present report falls into the third category, and is probably unique in that the same diagnosis group headings were used both for the collection of data on lost time and for the collection of data on conditions reported to industrial health centers.

Scope of Study

This report presents a summary of the morbidity data submitted annually by certain Ontario industries during the years 1955 to 1957 inclusive. The data refer to: (1) absences due to sickness and accident, and (2) conditions (sickness and accident) which were reported to the employee's health center. The original records from which the data were tabulated were prepared by company nurses or doctors according to one of the record systems designed by the Ontario Department of Health for the collection of data on morbidity in industry.

The combined experience of a group of eight companies which reported their absences for the three-year period, and the combined experience of a group of nine companies which reported their health center visits for the three-year period, are both presented. To permit direct comparisons between these two types of morbidity data, the combined experience of three companies which kept both types of records for the three-year period are also presented.

Explanation of Terms

In view of the lack of uniformity in terminology used in the field of industrial morbidity statistics, the following explanations are presented to ensure a clear understanding of the information set out in this report.

In 1948 when the World Health Organization published (2) the first internationally accepted statistical classification of diseases and injuries, the Divisions of Industrial Hygiene and Medical Statistics of the Ontario Department of Health undertook, in collaboration, the preparation of record systems for the collection of lost-time morbidity and health center visits in industry. These systems utilized the section headings of the International Statistical Classification to establish 19 diagnosis groups for use with both types of record systems.

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One small but important rearrangement of the I.S.C. was made in order to provide the industrial physician with a more satisfactory list by which to identify diseases of occupational origin; i.e., the sub-headings "Effects of Poisons" and "Effects of Weather, etc." were moved from the Injury section to the Disease section. An explanation of this rearrangement has been previously published (3). As the effect of this transfer required identification, the terms *sickness* and *accident* were selected and defined. For our purposes, sicknesses constitute all diseases plus the effects of poisons, weather, etc. (I.S.C. code numbers 001 to 795 + N 960 to 989), and accidents constitute all injuries excepting the effects of poisons, weather, etc. (I.S.C. code numbers N 800 to 959 + 990 to 999).

According to these record systems, the term *morbidity* includes conditions of both sickness and accident; the term has been previously described and used to mean "all illness resulting from disease or injury" (4). The term *absence* refers to the loss of time from work, from any cause of morbidity, of one full day or more. All absences are counted which begin within a calendar (or fiscal) year. For the sake of brevity the term *health center* is used in this article to mean a nursing or medical center staffed by one or more full-time nurses; there may or may not be part-time or full-time doctors connected with these health centers.

The reason for each visit to a health center may be classified under one or more of four broad sections. The first of these sections (the only one relevant to this article) deals with the reporting of conditions of morbidity. This section is divided into new and repeat conditions reported. New conditions are identified according to the 19 diagnosis groups previously mentioned, as well as six sub-groups within the accident group. Thus the term *conditions reported* refers to all causes of morbidity which prompt an employee to seek first aid or treatment at the health center. The provision of a 300-item alphabetical list of principal conditions reported allows the nurse almost invariably to identify correctly the reported condition as belonging to one or other of the 25 diagnosis groups and sub-groups.

When annual summaries are published on lost-time and on visits, companies are identified by number as well as by type of industry to which they belong; the types of industry are taken from the list published by the Dominion Bureau of Statistics (5).

Two frequency rates are used in the present article; each of these rates is the average annual rate for the three-year period:

(1) Absence Rate—the average number of morbidity absences per 100 employees.

(2) Reporting Rate—the average number of new conditions of morbidity reported to the health center per 100 employees.

Statistical Analysis

Certain figures from among the morbidity data collected during the years 1955 to 1957 inclusive are herewith presented. Population counts cover all employees subject to the appropriate record systems, and the figures are averages of three counts during each year. The size of the companies included varied from about 250 to 1,700 employees.

Morbidity Absences. Eight companies contributed the morbidity absence experience of their employees for each of three years. The original records were made on marginal-punch cards by five of these companies, and on Hollerith-type cards by the remaining three. Both types of card supplied essentially the same information, uniform collecting and recording instructions having been supplied to each Company (6, 7). Companies using the marginal-punch card system returned the cards annually for central coding and tabulating, while companies using mechanical tabulation equipment returned completed tabulations.

The eight companies were classified by type of industry as follows: Food & Beverage–2, Rubber Products–1, Clothing–1, Iron & Steel–2, Electrical Apparatus–1, Finance–1.

The average annual population for the three-year period was 5,685 employees; 3,635 or 64% of these employees were males, 2,050 or 36% were females. The employees contributed a total of 22,801 absences during the three-year period.

Data on morbidity absences, by the 19 diagnosis groups, are presented in

TABLE I—Absences*, and New Conditions Reported‡, by Diagnosis Groups—Numbers, Percentage Distributions and Annual Rates—1955–1957

Diagnosis Groups	Absences			New Conditions Reported		
	Number (1)	Per Cent (2)	Rate (3)	Number (4)	Per Cent (5)	Rate (6)
All Diagnosis Groups	22,801	100.0	134	93,741	100.0	582
Infective and parasitic diseases	191	0.8	1	388	0.4	2
Neoplasms	70	0.3	0	102	0.1	1
Allergic, endocrine, metabolic, and nutritional diseases	148	0.6	1	287	0.3	2
Blood and blood forming organs	17	0.1	0	102	0.1	1
Mental, psychoneurotic, & personality disorders	152	0.7	1	89	0.1	1
Nervous system & sense organs	355	1.6	2	3,188	3.4	20
Circulatory diseases	226	1.0	1	236	0.3	2
Acute upper respiratory infections	6,906	30.3	41	15,227	16.2	94
Other respiratory diseases	3,904	17.1	23	932	1.0	6
Diseases of digestive system	4,606	20.2	27	9,558	10.2	59
Disorders of menstruation	1,421	6.2	23§	3,816	4.1	69§
Other genito-urinary diseases	341	1.5	2	253	0.3	2
Complications of pregnancy	194	0.9	3§	151	0.2	3§
Skin and cellular tissue	379	1.7	2	3,757	4.0	23
Bones and organs of movement	636	2.8	4	1,509	1.6	9
Congenital malformations	2	0.0	†	21	0.0	0
Symptoms, & ill-defined conditions	1,945	8.5	11	15,880	16.9	98
Effects of poisons, weather	149	0.6	1	795	0.8	5
Accidents and violence	1,159	5.1	7	37,450	40.0	232

*Combined experience of eight companies.
‡Combined experience of nine companies.
§Rate computed on female populations
†Rate not computed for less than 10 absences.

table I (columns 1 to 3). The greatest number of absences was due to "acute upper respiratory infections" (30.3%). The next three leading groups were: "diseases of the digestive system" (20.2%), "other respiratory diseases" (17.1%), and "symptoms and ill-defined conditions" (8.5%). Accidents (occupational and non-occupational combined) accounted for only 5.1% of all morbidity absences. For all diagnosis groups combined there was an annual frequency rate of 134 absences per 100 employees.

New Conditions Reported. Nine companies contributed the experience of their employees in regard to health center visits for each of the three years. The original records were made on a form designed for the collection of data relating to daily visits. The day totals were transferred to a form that served two purposes: the summation of day totals by month, and of monthly totals by year. Each type of total was transferred to a form that served as both a monthly and a yearly report. The record system (8) when used in its entirety could provide information under 61 counting columns. Only the completed annual report form was submitted by the participating companies.

The nine companies were classified by type of industry as follows: Clothing–1, Paper Products–2, Iron & Steel–3, Electrical Apparatus–1, Chemical Products–1, Finance–1.

The average annual population for the three-year period was 5,372 employees; 3,519 or 65% of these employees were males, 1,853 or 35% were females. The employees reported a total of 93,741 new conditions to their health centers during the three-year period. Data on the new conditions reported, by the 19 diagnosis groups, are presented in table 1 (columns 4 to 6). The greatest number of new conditions reported occurred under the group title "accidents and violence" (40.0%). The next three groups in order were: "symptoms and ill-defined conditions" (16.9%), "acute upper respiratory infections" (16.0%), and "diseases of the digestive system" (10.2%). For all diagnosis groups combined there was an annual reporting rate of 582 new conditions per 100 employees.

In view of the fact that 40% of new conditions reported were accidents, a further breakdown of the nine-company accident experience is included. This breakdown is based on the sub-headings of Section N XVII in the International Statistical Classification titled "Alternative Classification of Accidents, Poisonings, and Violence (Nature of Injury)". As previously explained, these sub-headings excluded "Effects of Poisons" and "Effects of Weather, etc.". A total of 37,450 new accidents were reported to the health centers of the nine companies during the three years 1955–1957. These data, by seven diagnosis sub-groups, are presented in table II. The greatest number of new accidents reported occurred under the sub-group title "superficial injuries and contusions" (50.2%). The next two groups in order of frequency were: "lacerations, open and puncture wounds" (21.2%), and "foreign body and other eye injuries" (13%). Burns accounted for more reported conditions than fractures, dislocations, strains, and sprains combined.

Comparison of Absences and New Conditions Reported. Three of the reporting companies used the same system of recording absences and the same system of recording health center visits for each of the three years.

TABLE II—New Conditions Reported* by Accident Sub-groups,—number, Percentage Distribution and Annual Rate—1955–1957

Accident Sub-Groups	Number	Per Cent	Rate
All Accidents and Violence	37,450	100.0	232
Fractures and dislocations	205	0.6	1
Sprains and strains	2,264	6.0	14
Lacerations, open and puncture wounds	7,945	21.2	49
Superficial injuries, contusions	18,790	50.2	117
Foreign body and other eye injury	4,873	13.0	30
Burns	2,682	7.2	17
All other accidents and violence	691	1.8	4

*Combined experiences of nine companies.

These three companies were classified by type of industry as follows: Clothing–1, Iron & Steel–1, Finance–1. The average annual population for the three-year period was 1,880 employees; 714 or 38% of these employees were males, 1,166 or 62% were females. The employees contributed a total of 9,238 absences and 32,320 new conditions reported during the three years.

TABLE III—Comparison of Absences and New Conditions Reported* by Diagnosis Groups—Numbers, Percentage Distributions, Rates, and New Conditions/Absences Ratio—1955–1957.

Diagnosis Groups	Numbers		Per Cent Distributions		Rates per 100 Employees		Ratio of New Conditions Reported to Absences
	Absences	New Conditions	Absences	New Conditions	Absences	New Conditions	
All Diagnosis Groups	9,238	32,320	100.0	100.0	164	573	3.5
Infective & parasitic diseases	76	184	0.8	0.6	1	3	3.0
Neoplasms	26	22	0.3	0.1	1	0	0.0
Allergic, endocrine, metabolic, and nutritional diseases	85	165	0.9	0.5	2	3	1.5
Blood and blood-forming organs	6	4	0.1	0.0	‡	‡	‡
Mental, psychoneurotic and personality disorders,	41	36	0.4	0.1	1	1	1.0
Nervous system & sense organs	120	1,049	1.3	3.3	2	19	9.5
Circulatory diseases	71	67	0.8	0.2	1	1	1.0
Acute upper respiratory infections	3,275	6,475	35.5	20.0	58	115	2.0
Other respiratory diseases	673	228	7.3	0.7	12	4	0.3
Diseases of digestive system	1,920	4,384	20.8	13.6	34	78	2.3
Disorders of menstruation	751	2,622	8.1	8.1	22†	75†	3.4
Other genito-urinary diseases	185	136	2.0	0.4	3	2	0.7
Complications of pregnancy	104	83	1.1	0.3	3†	2†	0.7
Skin & cellular tissue	126	1,419	1.4	4.4	2	25	12.5
Bones & organs of movement	116	533	1.3	1.6	2	10	5.0
Congenital malformations	1	10	0.0	0.0	‡	0	‡
Symptoms, and ill-defined conditions	1,212	6,229	13.1	19.3	22	110	5.0
Effects of poisons, weather	49	167	0.5	0.5	1	3	3.0
Accidents and violence	401	8,507	4.3	26.3	7	151	21.6

*Combined experience of three companies using both "Absence" and "Visits" record systems.
†Rate computed on female populations.
‡Rate not computed for less than 10 absences.

Data on morbidity absences, and on new conditions of morbidity reported to the health centers, are presented for the 19 diagnosis groups in table III. "Acute upper respiratory infections" contributed the greatest number of absences (35.5%), and the second largest number of new conditions reported (20.0%). "Accidents and violence" was responsible for the greatest number of new conditions reported (26.3%), but accounted for only 4.3% of all morbidity absences. "Symptoms and ill-defined conditions" accounted for the third largest group of both absences and new conditions (13.1 and 19.3% respectively). For "other respiratory diseases", the per cent of absences was ten times as high as for new conditions reported.

The rates for all diagnosis groups combined showed that for every 100 employees there were 164 absences and 573 new conditions reported. When the rates for complications of pregnancy and disorders of menstruation are combined, it is seen that for every 100 female employees there were 25 such absences and 77 such new conditions reported.

The ratio of new conditions to absences showed that for every accident absence there were 21.6 new accidents reported to the health center. On the other hand, for every new condition reported which was entered under the heading "other respiratory diseases" (i.e. pneumonia, bronchitis, pleurisy, etc.) there were three absences attributed to this cause group.

Comments

The standardization of industrial morbidity records and procedures in order to produce basic data which will lend themselves to inter- and intra-company comparisons is a worth while objective. This objective can be achieved concurrently for morbidity absences and health center visits, as is demonstrated in this article.

A company which uses the two types of record systems is able to make direct comparison between the absence experience by specified causes and the morbidity experience reported to the health center, and to assess such a comparison. As an example, the three-company experience showed that "diseases of the skin and cellular tissue" ranked eighth among the absences and sixth among the new conditions reported but, further, it was shown that for every absence due to this cause there were 12.5 such new conditions reported. This suggests that the utilization of the plant health centers may have been a factor in reducing the number of absences from this cause.

The number of absences and the number of conditions reported to a health center are two qualitative factors in the measurement of morbidity in a group of workers. It is realized that each of these factors is influenced by many conditions. Among those which influence the absence frequency are the location and the size of the plant, the age and sex distribution of the population, the nature of benefit plans, social and community issues, general and specific employer-employee relationships, etc. Among the conditions which influence the volume of health center visits are the nature of the employee's work, accessibility of the health center, morale, company policy regarding the reporting and treatment of non-occupational as well as occupational conditions. sex distribution of the population, the adequacy of the number of health center personnel, etc.

Because of all these influences, probably the only really satisfactory comparisons that can be made are year-to-year comparisons within a given company. Nevertheless, company-to-company and company-to-group comparisons can be fruitful if the data are carefully evaluated. To this end the adoption of uniform recording, classification, and tabulation procedures is essential.

ACKNOWLEDGEMENT

I wish to acknowledge, with gratitude, the assistance and encouragement received from Dr. A. H. Sellers, Director, Division of Medical Statistics, and from Dr. R. B. Sutherland of the Division of Industrial Hygiene.

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THE ASSOCIATION - 50th YEAR - THE JOURNAL

MAINTENANCE OF PUBLIC HEALTH AND ITS IMPROVEMENT

To comprehend adequately the meaning of all that is implied in the term "national health" it will be necessary to realize that, while the nation's health is primarily measured by the number of deaths in any given population, yet, from a national standpoint, it may further be understood as indicating the maintenance of the largest possible number of effective citizens, viewed from the standpoint of their economic value to the state. . . . Not until the value of population as a national asset is fully comprehended will any people be prepared to exercise systematically as individuals or as a community those precautions necessary either to maintain or to improve its health to the highest degree possible under its environment. Today, France is struggling with a practically stationary population and finds it necessary to go to its Algerian provinces to recruit its army; while its ancient rival, Germany, sees her population increased from 38,000,000 in 1871 to 68,000,000 in 1908, and her industrial population from 15,000,000 to 40,000,000.

While immigration is thus shown to be a most potent factor in national development, it is yet more important, as illustrated by German statistics that the native-born shall have a normal increase, both by a high birth rate and the preservation of the infants born. . . . The reduction of deaths in children of even 5 per cent in a population of 7,000,000 would, in five years, add 30,000 native-born children to the population. That such is possible may be inferred from the fact that in Ontario from 1882 to 1902, with an increasing population, the deaths from the acute contagious diseases fell from 4,670 to 1,768. . . . What prevention in the case of a single disease may mean is illustrated by the decrease in deaths from diphtheria. Thus there were 4,541 deaths in 1881 in Canada from this disease, 3,536 in 1891; 1,982 in 1901; while the population had increased some 33 per cent in 1901 as compared with 1881.

P. H. Bryce, M.A., M.D.
The Public Health Journal of Canada
Volume 1, October 1910

Water Testing and Treatment Techniques for Field Use[1]

W. M. WARD[2]

MANY of the problems encountered by field staff in regard to water supplies can only be dealt with on the spot. In the case of taste and odour problems, the offending agent invariably dissipates while the sample is being transferred to the laboratory. Dissolved gases, escape from the sample or are converted by oxygen or by microscopic organisms. Temperature plays an important role. In some cases, a few simple tests on the spot may provide an answer and save time and effort.

Taste and Odour

The substances causing taste and odour are usually in such small concentrations that laboratory tests cannot detect them. In tracking down an odour problem, care should be taken to handle the samples in very clean glassware. Too often samples are taken in bottles which previously contained ketchup, pickles, preserves, vanilla, spirits, etc. It is almost impossible to wash out such containers and completely remove these characteristic odours. If necessary, new pint jars should be purchased or odour-free glassware obtained from the laboratory. Warming a sample to about 60° C. (140° F.) should intensify an odour and make it more easily identified or detected. Although accurate identification is important, experience has shown that it is better to concentrate on removing the odour. It may be much more satisfactory to treat a well or cistern by several methods than spend time trying to identify the odour. The use of chlorine or activated carbon may solve the problem, and if it does not, no harm will be done and no great expense incurred.

Removal by Chlorination

To remove odours or tastes from a well it is generally suggested that superchlorination be tried first. With this method enough compound-chloride of lime (supernatant), javel water or HTH is added to give a strong chlorinous taste or odour when it is well mixed with the water. This may be 50 to 100 parts per million of chlorine. The well is left overnight before being pumped out or dechlorinated.

Adequate mixing may be the biggest problem in a drilled well or casing. The use of HTH or Pittchlor tablets has been successful as they fall to the bottom and dissolve slowly. Several inspectors have had success in using HTH

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[1]Presented at the Ninth Annual Institute for Sanitary Inspectors, University of Manitoba.

[2]Chemist, Industrial Hygiene Laboratory, Manitoba Department of Health and Public Welfare, Winnipeg, Manitoba.

tablets to solve particular problems where it has been difficult to apply chlorine by liquid or powder. Weight for weight the tablets are the same as the high test hypochlorite powder (70% available chlorine). The following data are helpful in estimating dosage: Average unit weight of tablets—3.58 gm. Number of tablets per pound—163. One tablet per barrel of water (45 gallons) gives 12.3 p.p.m. chlorine. One tablet in 100 gallons gives 5.5 p.p.m. chlorine. Eighteen tablets in 1 gallon give a 1% chlorine solution.

Dechlorination

After treatment the excess chlorine can be removed by adding granular activated carbon, a few crystals of sodium thiosulfate (hypo) or some sodium sulfite. A sample of water in a clean jar should be taken before treatment and another sample after treatment and dechlorination. These samples should be heated to 60° C. and the odours compared. A sample of odour-free water should also be available for comparison.

Activated Carbon

It is suggested that experimental quantities of granular and powdered activated carbon be kept on hand for use in odour control. Some types are more effective than others for specific purposes. The value of activated carbon rests on the fact that it has a greater physical affinity for specific impurities in water than has the water itself. For analogy, let us compare ordinary rice with puffed rice. The activation process changes the physical structure without affecting the chemical composition. For example, one gram of powdered activated carbon is estimated to contain 120,000,000,000 particles and one cubic inch has an external and internal absorptive surface of 20,000 square yards—an area equal to 20 baseball diamonds.

It is to be remembered that the last traces of odour are more difficult to remove and require increasing amounts of activated carbon. For example, 5 p.p.m. may remove 50% of an odour from water, whereas doubling this to 10 p.p.m. may accomplish only 75% removal. In most of our field problems the amount is not important and we should make sure that more than sufficient is added to do the work. These remarks relate to small water supplies and not municipal plants. Because of the physical reaction of activated carbon, it is important that it be well mixed with the water and left in contact as long as possible.

To determine whether adding activated carbon would be effective the following test is used. Two bottles are filled with the water and a spoonful of granular or powdered activated carbon is added to one, mixed well and allowed to settle or filtered through filter paper. The samples of the treated water and the original water are heated to 60° C. and the odours compared.

Hydrogen Sulfide

The odour of hydrogen sulfide in a water supply is often the cause of requests for examination. If you can detect the characteristic odour, there is no need to have it confirmed in the laboratory. By the time a sample arrives, it is usually not detectable. If, for some reason, it is desirable to have the laboratory confirm the presence of sulfide, the sample should be sent in a special bottle

which contains mercuric chloride as a preservative. Bacteriological bottles containing sodium thiosulfate should not be used. Although hydrogen sulfide in air is poisonous and acts similarly to carbon monoxide and hydrogen cyanide, when dissolved in water it is not poisonous and, in fact, it is present in potable sulfur spring waters. It is about three times as soluble as carbon dioxide. The odour is objectionable in amounts as low as 1 p.p.m. If the water has a high pH, the odour may be slight since most of the sulfide will be present as alkaline sulfides rather than hydrogen sulfide.

Hydrogen sulfide in well water generally comes from boulder clay, contamination due to local atmospheric conditions, anaerobic bacteria in sewage waste, or contamination of mine water with sulfur (1). Certain bacteria will produce hydrogen sulfide from organic matter containing sulfur such as many proteins. Others will reduce inorganic matter, sulfates and sulfites.

As well as the taste and odour problem, hydrogen sulfide also imparts a more corrosive nature to water. It will react with chlorine, decreasing the effectiveness of chlorination and increasing the quantity of treatment required. Some zeolites are damaged by as low as 2 p.p.m. hydrogen sulfide so much that the mineral bed cannot be reconditioned. It also accounts for some well waters which contain a finely divided black precipitate of sulfide.

Aeration of the water, either by gravity or by pressure, may be used to remove H_2S down to about 1 or 2 p.p.m. The amount of free sulfur precipitated may be noticeable and require filtration to remove it. A combination of aeration with pH reduction will increase the efficiency of removal. The most effective range is pH 4 to 5. Complete removal is secured only by chlorination.

For small water supplies where sulfide is objectionable superchlorination of the well may be tried first. If the odour returns after this treatment, it is useless to try anything else on the well. The only recourse is to treatment of the water by aeration, chlorination, or special ion-exchange mineral.

Fluorescein Tracer

The dye fluorescein or uranine is being used frequently to trace the movement of surface and ground waters. In some cases the results are very dramatic and require no confirmatory tests. In others, although the dye is coming through, it may not be apparent due to its low concentration or to interfering colors. Chemical extraction and identification of the dye may provide a positive answer in these cases. Some surface and ground waters contain material which fluoresces under ultra-violet light and may give a false report unless proper controls are taken. Fluorescein can be detected with certainty to a lower limit of 0.6 gamma. This would be equivalent to 3 parts per billion in a 2 liter sample. The test requires extraction with amyl acetate and examination under ultra violet light (2). It is apparent that generally we do not use enough dye to give a reasonable test. Although it costs $6.00 per pound, we feel that extra large doses are required (½ lb. for a septic tank) and if there is any chance that the matter will become the subject of litigation, proper controls and continuity of handling must be established. It is very easy to contaminate a control sample with powdered fluorescein. Viewing through a 6 inch depth of liquid in a clean glass container, it is possible to detect 0.1 p.p.m. with the eye. Before mixing or adding the dye, take a control sample at the sampling point

(not the application point), close the bottle cap and set bottle aside to prevent contamination from the powder. Then mix dye in a pail of water and add to siphon chamber or other point of application. Take one gallon samples from the suspected point of contamination at intervals. We suggest 6, 12, and 36 hour samples. Local conditions may require other intervals. At any rate, at least 3 samples should be taken.

Water Hardness and Softening

Sanitary inspectors frequently encounter problems with zeolite-type softeners in households or institutions. To check salt consumption, determine first the hardness of the raw water in grains per gallon. Divide the number of grains by 2 to obtain the number of pounds salt required to regenerate for each 1,000 gallons of water softened. This is a rough rule, but will indicate if unit is being operated more or less normally. Most softeners are regenerated when a hardness test indicates the cycle is complete or the mineral capacity exhausted. A simple kit may be used which indicates if the treated water is above or below 50 p.p.m. hardness. If it is above 50 p.p.m., the unit should be regenerated (this is an arbitrary figure and kits can be made to indicate any stated hardness).

A kit may consist of: A test bottle marked at 10 ml. capacity, a bottle of Versenate solution with dropper and a bottle of indicator powder. In testing, fill the test bottle to the mark with sample, add the indicator (a "pinch" of powder), add 1 dropperful of Versenate solution, shake well to dissolve and note the colour. If blue, the water is below 50 p.p.m. hardness. If the mixture is pink, the water is above 50 p.p.m. hardness. Sometimes it will be apparent that a unit is not operating efficiently, i.e., it requires regenerating too often or does not produce a soft water after regeneration. It may be that the water source has increased considerably in hardness, or the mineral bed has been reduced by loss of material during backwashing. Generally, it means that the mineral grains have become coated with iron oxide or silt. Often it can be cleaned by running a detergent through in the same manner as when regenerating with salt. Sodium hydrosulfite will sometimes reduce the iron and allow its removal with salt regeneration. Badly coated mineral may require two or three cleanings. Another successful method is treatment of the zeolite with HCl 10% solution followed by salt regeneration. Of course, these measures are not preventive. It has been shown that proper dosage of polyphosphates in the raw water will prevent retention of iron and fouling of the mineral (3). Persons selling zeolite softeners generally recommend the removal of iron by aeration and filtration before softening.

The materials and equipment mentioned in this article are supplied to Sanitary Inspectors and Health Units in Manitoba by the Industrial Hygiene Laboratory of the Manitoba Department of Health and Public Welfare.

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Canadian Journal of Public Health

THE COMING PUBLIC HEALTH CONGRESS IN MONTREAL, JUNE 1, 2, 3, 1959

MONTREAL was the host city to the first annual meeting of the Canadian Public Health Association held on December 10, 11 and 12, 1911. It is indeed appropriate that the Association should mark its fiftieth year by convening in Montreal. La Société d'Hygiène et de Médecine Préventive de la Province de Québec will join with the national association in marking this occasion. The program will reflect the past and look to the future. There will be inspiration as we review the achievements in public health in the last half-century. New challenges will face us as we consider the perplexing problems of the "new public health", but with renewed confidence we will go forward to achieve an even greater measure of progress.

The Canadian Public Health Association was born at the time when full-time health personnel in provincial and local departments were just being appointed. Typhoid fever was being successfully controlled by filtration and chlorination of public water supplies and the value of the pasteurizing of milk was just being appreciated. It was the day of great advances in sanitary science. In regard to the Canadian Public Health Association, it is of interest that the national conventions of the Association have been held each year with only three exceptions, in spite of two world wars and the financially difficult years of the "30's". Four of the meetings have been held in Montreal and two in Quebec City.

La Société d'Hygiène et de Médecine Préventive de la Province de Québec had its origin in the Convention Annuelle des Services Sanitaires de la Province de Québec. This annual meeting was introduced by Dr. Elzear Pelletier in 1908 shortly after the first steps were taken to organize the health services of the province into ten districts each with a full-time medical officer as health inspector. La Société has taken a leading part in the work of the Canadian Public Health Association. The officers and members of the Société have assumed the responsibility for the program and arrangements for the Jubilee meeting in Montreal.

The Congress will be a notable occasion. His Excellency, the Right Honourable Vincent Massey, C.H., Governor-General of Canada has been pleased to give

his patronage to the Association and has expressed his deep interest in its work. The Honorary President for the Jubilee Year is the Honourable Dr. Arthur Leclerc, Minister of Public Health of Quebec. Dr. Jules Gilbert and the other officers of the Congress are presenting a most attractive program with three general sessions and fifteen meetings of the sections of the Association.

On Monday, at a joint luncheon the Honourable Mr. J. Waldo Monteith, Minister of National Health and Welfare, will address the members. On Tuesday evening the annual dinner will be the focal point of the meetings and will suitably mark the Association's jubilee. Presentation of honorary life membership will be made to several leaders in public health whose meritorious work is being recognized on this jubilee occasion. Preceding the dinner, Dr. Jules Gilbert, President of the Congress will receive the members and guests. Members of La Société d'Hygiène et de Médecine Préventive de la Province de Québec are participating in the program of the general sessions and section meetings. A luncheon of the Société will be held on Tuesday. On Monday afternoon the City of Montreal is host to the Congress and Mayor Senator Sarto Fournier will welcome the members at a reception at the Chalet de la Montagne. The Congress will close on Wednesday afternoon at a reception given by Dr. Armand Frappier, Director of the Institute of Microbiology and Hygiene, Laval des Rapides. This will afford the opportunity of visiting these important laboratories.

Members will appreciate the arrangements whereby all of the sessions and the exhibits will be in the Sheraton Mt. Royal Hotel. The Hotel has kindly consented to hold a block of rooms for the members of the Association, but early reservation is important.

ROYAL WORDS

IT is indeed pleasing that His Excellency, the Right Honourable Vincent Massey, C.H., Governor-General of Canada, has graciously extended his patronage to the Canadian Public Health Association. It is well known that His Excellency is deeply interested in public health and has taken an active part in various special efforts designed to further health and welfare in Canada.

On the occasion of the first meeting, which was held in Montreal in December, 1911, His Royal Highness Field Marshal the Duke of Connaught, the Governor-General, as patron, addressed the Congress stating: "Of the many subjects which are awaiting solution in Canada, none is so important, to my mind, as the health of its inhabitants both adult and infant. Public Health is a question which rises above all politics and it is the duty of the whole nation to join in promoting the objects of this Association. . . . We must make it an object to impress on the public the necessity of obtaining health by the prevention of disease not by its cure."

These words are as appropriate today as they were fifty years ago and they remind us of the work which the Association must continue to do in the furtherance of public health in Canada.

The Organizing Committee of the Canadian Public Health Association, 1910

FREDERICK MONTIZAMBERT, C.M.G., I.S.O., M.D. (Edin.), F.R.C.S. (Edin.), D.C.L. 1843–1929

Dr. Montizambert took a leading part in the organization of the Canadian Public Health Association in 1910. He was the leading figure in public health in Canada and Director General of Public Health and sanitary adviser to the Dominion government. He was a man of great dignity, impressive in speech and stature. Dr. Montizambert was born in 1843 in Quebec City, son of the Hon. E. L. Montizambert and Lucy Bowen, daughter of Chief Justice Bowen. He received his medical training at Laval University and in Edinburgh, receiving the degree of M.D. in 1864. He was principal medical officer, Quebec Military District during the Fenian raids in 1866. Later, he was appointed Assistant Superintendent of Grosse Ile Quarantine Station and in 1869 was appointed Superintendent. Thousands of deaths occasioned by typhus fever and cholera made the quarantine service the major public health work of the federal government. During his years of service, Dr. Montizambert improved the quarantine regulations. In 1894, he was appointed General Superintendent of Quarantine Services of Canada. In 1899, he was appointed Director General of Public Health and moved from Grosse Ile to Ottawa. He continued in this office until the organization of the Department of National Health and the commencement of the Ministry of Health of Canada. Dr. Montizambert played a leading part in the organization of the St. John Ambulance Association, the Victorian Order of Nurses and the Canadian Tuberculosis Association. He received many honours including the Knight of Grace Order of the Hospital of St. John of Jerusalem, and was made a Fellow of the Society of Medical Officers of Health of Great Britain. He received the C.M.G. in 1916. He was president of the American Public Health Association and president of the St. John Ambulance Association.

The Canadian Public Health Association pays tribute to his contribution to the establishing of the Association.

Program

JUBILEE MEETING

CANADIAN PUBLIC HEALTH ASSOCIATION

AND

LA SOCIETE D'HYGIENE ET DE MEDECINE PREVENTIVE OF THE PROVINCE OF QUEBEC

SHERATON-MT. ROYAL HOTEL, MONTREAL

JUNE 1 - 3, 1959

PRE-CONVENTION MEETING

SUNDAY, MAY 31, 2.30 p.m.

MEETING OF THE EXECUTIVE COUNCIL CANADIAN PUBLIC HEALTH ASSOCIATION

Salon D

REGISTRATION

MONDAY, JUNE 1, 8.30 a.m.

Each delegate is expected to register. The fee is $5.00 for everyone, except wives of members.

Tickets for the breakfasts, the luncheons, the annual dinner and all social activities are available at the Registration Desk, foyer of the Ballroom, ninth floor.

Delegates would help the Local Organization Committee by procuring their tickets when registering.

REGISTRAR: Paul Parrot, M.D., M.P.H., Demographer, Ministry of Health, Quebec.

MONDAY, 9.30 a.m.

PUBLIC HEALTH NURSING, NUTRITION, CHILD AND MATERNAL HYGIENE SECTIONS

Brittany Room

Chairman: Miss GABRIELLE CHARBONNEAU, R.N., B.A., M.Sc. Director of Public Health Nursing, School of Hygiene, University of Montreal, Montreal.

Trends in Infant Feeding.

MARCELE DORION, M.D., D.H.P., M.Sc., Consultant in Maternal and Child Hygiene, Ministry of Health, Quebec.

Influence of Prenatal Nutrition on the Child's Dental Health
ABERDEEN L. McCABE, D.D.S., D.H.D.P. Dental Health League of the Province of Quebec, Valleyfield.

Prenatal Education in a Rural Area
Miss THERESE LANGLAIS, R.N., P.H.N. County Health Unit of Matapedia, Amqui.

Group Teaching in Urban Areas
Miss RITA DOYON, R.H., P.H.N., B.Sc. Nursing Supervisor, City Health Department, Montreal.

Vaccination Schedule in Childhood
MARC BERGERON, M.D., D.P.H. Director, County Health Unit of St. Hyacinthe-Rouville, St. Hyacinthe.

MONDAY, 9.30 a.m.

MEDICAL OFFICERS, EPIDEMIOLOGY, LABORATORY AND SANITATION SECTIONS

Ballroom

Chairman: HUGH D. STARKEY, M.D., Chief of Laboratories, Queen Mary Veterans Hospital, Montreal.

Co-Chairman: A. R. FOLEY, M.D., Dr. P.H. Epidemiologist of the Province, Ministry of Health, Quebec, and Professor of Epidemiology, School of Hygiene, University of Montreal.

The Rodent and Avian-Borne Diseases in Canada
J. E. McKIEL, M.Sc., Ph.D. Laboratory of Hygiene, Department of National Health, Ottawa.

Review of Pathogenic E. Coli Infections including Studies of Community Outbreaks
Miss MARGARET FINLAYSON, M.Sc., Division of Laboratories, Ontario Department of Health, Toronto.

LEADING DISCUSSANTS:
E. T. BYNOE, M.D. Laboratory of Hygiene, Dept. of National Health, Ottawa.
W. H. CROSS, M.D., D.P.H., Medical Officer of Health, Muskoka District, Ontario.
N. A. HINTON, M.D. Queen's University, Kingston.
B. MARTINEAU, M.D., Ste. Justine Hospital.

Response to Vaccination with Poliomyelitis Vaccine of Mothers during Pregnancy and of their Infants
R. J. WILSON, M.D., D.P.H., J. P. JACOBS, G. W. O. MOSS, M.D., D.P.H., Connaught Medical Research Laboratories, Toronto.

Observations on the Present Rabies Epizootic in Canada
A. ROBERTSON, D.V.M. Animal Diseases Research Institute, Hull.

Intra-Hospital Infection as a Community Problem
HUGH D. STARKEY, M.D. Chief of Laboratories, Queen Mary Veterans Hospital, Montreal.

MONDAY, 9.30 a.m.

HEALTH AND VITAL STATISTICS SECTION

Salon L

Chairman: RENE MAILLE, M.D., D.P.H. Demographer, City Health Department, Montreal.

PANEL DISCUSSION: **Thoughts on the Evolution of Health Statistics.**

Is the Large Family in Fashion?
YOSHI KASAHARA, Ph.D. Asst. Senior Research Statistician, Dominion Bureau of of Statistics, Ottawa.

Business Meeting

MONDAY, 9.30 a.m.

MEDICAL CARE SECTION

Salon D

Chairman: F. BURNS ROTH, M.D., Deputy Minister of Public Health, Saskatchewan.

The Federal-Provincial Hospital Insurance and Diagnostic Services Program—The First Year

E. H. LOSSING, M.D., M.P.H., Department of National Health and Welfare, Ottawa.

Mr. GORDON L. PICKERING, Commissioner of Hospitalization, Manitoba Hospital Services Plan.

Discussant: G. GRAHAM SIMMS., M.D., Vice-Chairman, Hospital Insurance Commission, Halifax.

PANEL DISCUSSION: **The Voluntary Hospital Under Hospital Insurance.**

The Viewpoint of a Hospital Administrator

(Speaker to be announced.)

The Viewpoint of a Public Administrator

Mr. J. D. CAMPBELL, Director, Hospitals Division, Department of Health, Edmonton.

Discussant: MALCOLM TAYLOR, Ph.D., Department of Political Economy, University of Toronto.

Open Discussion.

MONDAY, 9.30 a.m.

DENTAL HEALTH SECTION

Salon B

Riverdale Dental School Project (Toronto)

FRANK COMPTON, D.D.S., D.D.P.H., Director of Dental Services, Department of Health, Toronto.

Film on Stannous Fluoride Application

FRANK COMPTON, D.D.S., D.D.P.H.

Title to be announced

J. L. BONNEAU, D.D.S., D.D.P.H., Director, Dental Health Division, Ministry of Health, Quebec.

Water Fluoridation

DAVID AST, D.D.S., M.P.H., Director, Division of Dental Services, N.Y. State Department of Health, New York.

MONDAY, 12.30 p.m.

LUNCHEON OF THE CANADIAN PUBLIC HEALTH ASSOCIATION

Champlain Room

Presiding: JULES GILBERT, M.D., D.P.H. Director of Health Education, Ministry of Health, Secretary of the School of Hygiene, University of Montreal and President of the Canadian Public Health Association, Montreal.

Guest Speaker: The Hon. J. WALDO MONTEITH, Minister of National Health and Welfare, Ottawa.

Tickets may be purchased at the Registration Desk.

MONDAY, 2.15 p.m.

GENERAL SESSION

Ballroom

Chairman: JULES GILBERT, M.D., D.P.H. President of the Canadian Public Health Association, Montreal.

Addresses of Welcome:

His Worship the Mayor of Montreal, the Hon. Senator SARTO FOURNIER.

The Minister of Health of the Province: The Hon. ARTHUR LECLERC, M.D.

Presidential Address
JULES GILBERT, M.D., D.P.H. President of the Canadian Public Health Association, Montreal.

Dr. Edward Playter and a Vision Fulfilled
ROBERT D. DEFRIES, M.D., D.P.H. Editor, The Canadian Journal of Public Health, Toronto.

The Association . . . Today and Tomorrow
K. C. CHARRON, M.D., C.M. Director of Health Services, Department of National Health, Ottawa.

MONDAY, 6.00 p.m.

THE MAYOR'S RECEPTION

Le Châlet de la Montagne

Reception graciously offered to the members of the Association and to their wives by the City of Montreal.

TUESDAY, JUNE 2, 8.00 a.m.

BREAKFAST OF THE ALUMNI ASSOCIATION OF THE SCHOOL OF HYGIENE UNIVERSITY OF TORONTO

Salon E

Tickets may be purchased at the Registrar's Desk.

TUESDAY, 9.00 a.m.

LABORATORY SECTION

Technical visit to the Virus Laboratories, Institute of Microbiology and Hygiene, University of Montreal, at Laval-des-Rapides, under the direction of Dr. VYTAUTAS PAVILANIS, Chief of the Laboratory Services.

TUESDAY, 9.30 a.m.

MEDICAL OFFICERS, PUBLIC HEALTH NURSING AND EPIDEMIOLOGY SECTIONS

Ballroom

Chairman: ADELARD GROULX, M.D., M.P.H., Director, City Health Department, Montreal.

The Epidemiology of Cardiac Diseases
PAUL DAVID, M.D. Director, Montreal Cardiological Institute, Montreal.

The Normal Child and the Problem Child
JEAN DARGIS, M.D., D.P.H. Director, City Health Unit, Trois-Rivieres.

Prevention of Accidents in the Home
Miss HELEN G. McARTHUR, P.H.N., B.Sc., M.A. Director of Nursing Services, Canadian Red Cross Society, Toronto.

Integration of Home Safety in a Public Health Program
ANT.-B. VALOIS, M.D., M.P.H. Assistant to the Director, City Health Department, Montreal.

The Future of Health Education
BRUNO GEBHARD, M.D. Director, Cleveland Health Museum, Cleveland, Ohio.

TUESDAY, 9.30 a.m.

ENVIRONMENTAL HYGIENE SECTION

Brittany Room

Chairman: JEAN MARIER, B.Sc.A., M.Sc., Prof. Eng., City Health Department, Montreal.

The Treatment of Water by Ozone
C. E. GRAVEL, Consulting Engineer, Montreal.

Animal Brucellosis
MAXIME VEILLEUX, D.M.V. Director, Division of the Health of Animals, Department of Agriculture, Quebec.

The Sanitary Problems of Swimming Pools
R. CADIEUX, C.S.I.(C). Sanitary Inspector, City Health Department, Montreal.

The Obnoxious Insects and Their Control
Rev. FOURNIER.

Studies on the Pollution of Streams
ROBERT R. CARRIER, B.A.Sc., Prof. Eng., Ministry of Health, Quebec.

TUESDAY, 9.30 a.m.

SECTION OF VETERINARY MEDICINE

Salon I

Chairman: MARC L'HEUREUX, D.M.V. Director, Division of Foods, Ministry of Health, Montreal.

TUESDAY, 9.30 a.m.

INDUSTRIAL HYGIENE SECTION

Salon K

Chairman: F.-J. TOURANGEAU, M.D., D.P.H. Director, Division of Industrial Hygiene, Ministry of Health, Montreal.

The Lead Hazard in Indoor Rifle and Revolver Ranges
C. R. ROSS. Division of Professional Hygiene, Department of National Health, Ottawa.

An Evaluation of Health Examinations in Industry
DONALD C. BEWS, M.D., D.P.H. The Bell Telephone Company of Canada, Montreal.

Some Aspects of Occupational Health in Canada
A. J. de VILLIERS, M.D. Division of Professional Hygiene, Department of National Health, Ottawa.

Anxiety in Industry
L. P. CHESNEY, M.D. Imperial Tobacco Company of Canada Limited, Montreal.

An Appraisal of the Silicosis Hazards in Ontario Foundries under Present-Day Conditions
HAROLD F. V. WALL, M.D. Division of Industrial Hygiene, Ontario Department of Health, Toronto.

TUESDAY, 9.30 a.m.

HEALTH EDUCATION SECTION

Salon D

Chairman: PIERRE de LEAN, Division of Health Education, Ministry of Health, Montreal.

THE PREPARATION OF TEACHERS FOR THEIR ROLE IN THE SCHOOL HEALTH PROGRAM

Views from British Columbia:
RAY GOODACRE, M.A., C.P.H. Director of Health Education, Vancouver.

Views from Alberta:
C. EVOY. Director of Health Education, Edmonton.

Views from Ontario:
Miss MARGARET CAHOON, B.A., B.Ed. Associate, School of Hygiene, University of Toronto, Toronto.
Views from Quebec:
LUCIEN PLANTE, M.A., L.Ped., L.Sc.S., M.P.H. School of Hygiene, University of Montreal, Montreal.
Views from New Brunswick:
Miss KATHERINE McGLAGAN, P.H.N. Director of Health Education, Teacher's College, Fredericton.
Views from Newfoundland:
Mrs. DAPHNE HOUSE. Health Educator, St. John's.
Group Discussion

TUESDAY, 9.30 a.m.

DENTAL HEALTH SECTION
Salon B

Importance of Treatment in a Dental Health Program
PAUL DUMONTIER, D.D.S. Division of Dental Health, City Health Department, Montreal.
Education in Dental Public Health
YVES LAFLEUR, D.D.S., D.D.P.H. League of Dental Hygiene.
Business Meeting

TUESDAY, 9.30 a.m.

MEDICAL CARE AND HEALTH AND VITAL STATISTICS SECTIONS
Salon L

Financing Personal Health Services in Canada
J. E. SPARKS, Research and Statistics Division, Department of National Health and Welfare, Ottawa.
Discussant: MURRAY ACKER, M.D., Director, Co-ordination and Planning Branch, Department of Public Health, Saskatchewan.
New Developments in Medical Care Insurance Plans
Speakers to be announced.

TUESDAY, 12.30 p.m.

LUNCHEON OF LA SOCIETE D'HYGIENE ET DE MEDICINE PREVENTIVE OF THE PROVINCE QUEBEC
Champlain Room

Chairman: CYRILLE POMERLEAU, M.D., D.P.H. Director, County Health Unit of Levis and President of La Société d'Hygiène et de Médecine Préventive, Levis.
Guest of Honour: JEAN GREGOIRE, M.D. Dr. P.H. Deputy Minister of Health, Quebec.
Tickets may be purchased at the Registration Desk.

TUESDAY, 12.30 p.m.

LUNCHEON OF THE HEALTH AND VITAL STATISTICS SECTION
Salon D

Chairman RENE MAILLE, M.D., D.P.H. Demographer, City Health Department, Montreal.
Guest of Honour: HALBERT L. DUNN, M.D. Chief, National Office of Vital Statistics, Washington, D.C.
Subject: **What High-Level Wellness Means**
All members of the Association are cordially invited. Tickets may be purchased at the Registration Desk.

TUESDAY, 2.15 p.m.

GENERAL SESSION

Ballroom

Chairman: JULES GILBERT, M.D., D.P.H. President of the Association, Montreal.

To be announced

Miss ALICE GIRARD, P.H.N., M.A. President of the Canadian Nurses Association and Director of Nursing, St. Luc Hospital, Montreal.

GEORGE ROSEN, M.D., Ph.D., M.P.H. Editor, American Journal of Public Health and Professor of Health Education, Columbia University, New York.

Symposium: **Recent Advances in the Laboratory Diagnosis of Virus Infections, with Particular Reference to the Role of Public Health and Hospital Laboratories.**

PARTICIPANTS:

A. J. RHODES, M.D. Director, School of Hygiene, University of Toronto, Toronto.

V. PAVILANIS, M.D. Virus Services, Institute of Microbiology and Hygiene, University of Montreal, Montreal.

T. P. NAGLER, M.D. Director, Laboratory of Hygiene, Department of National Health, Ottawa.

J. C. WILT, M.D. University of Manitoba, Winnipeg.

C. E. van ROOYEN, M.D. Professor of Bacteriology, Dalhousie University and Director of Nova Scotia Public Health Laboratories, Halifax.

TUESDAY, 6.30 p.m.

THE PRESIDENT'S RECEPTION

Champlain Room

Members and their wives are cordially invited to attend the President's reception.

TUESDAY, 7.30 p.m.

JUBILEE DINNER

Ballroom

Presiding: JULES GILBERT, M.D., D.P.H. President of the Association.

Presentation of Honorary Life Memberships.

Introduction of the President-Elect, J. S. Robertson, M.D., D.P.H.

Presentation of the Association's Certificate of Office to the retiring President, JULES GILBERT, M.D., D.P.H.

Address: "Five Million Reasons". MARGARET NIX, Ph.D., Assistant Professor, Department of Health and Social Medicine, McGill University, Montreal.

TUESDAY, 9.30 p.m.

DANCE

Champlain Room

WEDNESDAY, JUNE 3, 8.00 a.m.

BREAKFAST OF THE ALUMNI OF THE SCHOOL OF HYGIENE, JOHNS HOPKINS UNIVERSITY

Salon A

WEDNESDAY, 9.30 a.m.

GENERAL SESSION

Ballroom

Chairman: JULES GILBERT, M.D., D.P.H. The President of the Association.

Staphylococcal Infections in Nurseries

LISE F. DAVIGNON, M.D., M.P.H. Institute of Microbiology and Hygiene, Montreal.

MARCEL CANTIN, M.D. D.P.H. Ministry of Health, Montreal.
JACQUES ST-PIERRE. Institute of Microbiology and Hygiene, Montreal.

Canadian Public Health Association—Consideration of the reports of the Committees on Resolutions and on Nominations and of any matters referred to the annual meeting by the Executive Council.

Soluble Protective Antigens Extracted from H. Pertussis: Experimentation on Man and on Animals

ARMAND FRAPPIER, O.B.E., M.D., L.Sc., M.S.R.C. Director, Institute of Microbiology and Hygiene, Dean of the School of Hygiene, University of Montreal.
JEAN BACHAND, L.L.L., L.Sc. Com., M.S. Director of Public Relations, University of Montreal, Montreal.

The Role of the Faculty of Medicine in the Continuing Education of Public Health Personnel

JAMES M. MATHER, M.D., D.P.H. Department of Preventive Medicine, Faculty of Medicine, University of British Columbia, Vancouver.

Business Meeting: Société d'Hygiène et de Médecine Préventive.

WEDNESDAY, 12.30 p.m.

LUNCHEON FOR GRADUATES OF THE SCHOOL OF HYGIENE OF THE UNIVERSITY OF MONTREAL

Normandy Room

Chairman: ARMAND FRAPPIER, O.B.E., M.D., L.Sc., M.S.R.C. Dean of the School of Hygiene, University of Montreal, Montreal.
Tickets may be purchased at the Registration Desk.

WEDNESDAY, 2.00 p.m.

PUBLIC HEALTH NURSING SECTION

Ballroom

Chairman: Miss ELIZABETH REED, R.N. Asst. Director in Chief, Victorian Order of Nurses, Ottawa.

Symposium

Public Health Education of the Student and of the Graduate Nurse.

PARTICIPANTS:

Miss RAE CHITTICK, R.N., B.S., M.A., M.P.H., L.L.D. Director, School for Graduate Nurses, McGill University, Montreal.
Rev. Sister JEANNE FOREST, R.N., M.Sc. Nsg. Ed. Professor, Institute Marguerite D'Youville, Montreal.
Mrs. ISOBEL McLEOD, R.N., B.Sc., M.A. Director of Nursing, Montreal General Hospital, Montreal.
Miss YVETTE NOTEBAERT, R.N., P.H.N., B.Sc. Nursing Supervisor, City Health Department, Montreal.
Mrs. DORIS SMALL, P.H.N. District Director, Victorian Order of Nurses, Montreal.

WEDNESDAY, 2.00 p.m.

SECTION OF PUBLIC HEALTH EDUCATION AND VOLUNTARY AGENCIES

Salon K

Chairman: Mrs. ALBERTE SENECAL. Officer in Charge, French Information Services, Department of National Health, Ottawa.

PANEL:

Health Education: Aspects and Teamwork.

Applying the principles of education to Public Health

RALPH E. WENDEBORN, M.P.H. Director of Health Education, Winnipeg.

Point of View of the Public Health Officer

STEWART MURRAY, M.D., D.P.H., Senior Medical Health Officer, Metropolitan Health Committee, Vancouver, B.C.

Point of view of the Public Health Nurse

Miss RUTH AUBIN, R.N. County Health Unit, Cookshire.

Point of view of the Nutritionist

Mrs. FERNANDE DURAND-ROSE, B.Dt. Nutritionist, City Health Department, Montreal.

Point of view of the Public Health Dentist

HENRI TOURIGNY, B.A., D.D.S. County Health Unit, Magog.

Point of view of the Voluntary Agencies

J. D. GRIFFIN, M.D. General Director, Canadian Mental Health Association, Ottawa.

L. C. SIMARD, M.D. Director, Cancer Institute, Montreal.

Group Discussion

Business Session

WEDNESDAY, 2.00 p.m.

MEDICAL CARE SECTION

Salon L

Chairman, VICTOR H. RADOUX, M.D., Medical Director, Hotel Dieu, Quebec.

Illness as Seen by the Patient and the Physician in Relation to High Utilization of Medical Services

W. B. STIVER, M.D., Medical Director, Physicians' Services Incorporated, Toronto.

Discussant: W. HARDING LERICHE, M.D., Associate Professor, School of Hygiene, University of Toronto.

Open Discussion.

The Functions of an Out-Patient Department

GERALD LASALLE, M.D., Director, Institute of Hospital Administration, University of Montreal.

Discussant: J. R. BOUTIN, M.D., Medical Director, Notre Dame Hospital, Montreal.

Open Discussion.

Convalescence and Chronicity

The Problem of Facilities and Services—J. B. NEILSON, M.D., Commissioner, Ontario Hospital Services Commission, Toronto.

The Problem of Hospital Clearance—Speaker to be announced.

Open Discussion.

Business Meeting.

WEDNESDAY, 2.00 p.m.

SECTIONS OF NUTRITION AND DENTAL HEALTH

Salon B

Chairman: J. E. SYLVESTRE, M.D., D.H.P. Director, Division of Nutrition, Maternal and Child Hygiene, Ministry of Health, Quebec.

The Philosophy Underlying the Canadian Dietary Standards

W. W. CRAMPTON, Ph.D., F.R.S.C. Chairman, Department of Nutrition, MacDonald College, McGill University, Montreal.

A Study of the Nutritive Value of Fresh Milk and Instant Non-Fat Dry Milk

Miss MARIETTE BLAIS, B.A., B.Sc. (Nut.), M.Sc. (Nut.), Assistant Professor, Institute of Dietetics, University of Montreal, Montreal.

PANEL DISCUSSION: Can We Improve Nutrition At All Ages?

Moderator: J. E. SYLVESTRE, M.D., D.H.P.

A Frank Look at the Health of School Children

ROBERT GOURDEAU, M.D., F.R.C.P.(C.). Montreal Children's Hospital, Montreal.

Some Teaching Techniques in the Nutrition Education of Children

Mrs. RACHEL PILON, M.S., P.DE., Milk for Health Incorporated, Montreal.

Nutrition Education of Adults in a Hospital Diet Teaching Center

Miss DORIS NORMAN, M.A., P.DT. Diet Teaching Center, Montreal General Hospital, Montreal.

Food For the Older Person

L. B. PETT, M.D., Ph.D. Director, Nutrition Division, Department of National Health, Ottawa.

WEDNESDAY, 2.00 p.m.

ENVIRONMENTAL HYGIENE SECTION

Salon D

Chairman: JEAN MARIER, B.Sc.A., M.Sc. City Health Department, Montreal.

Sanitary Control of Automatic Food Distributors

A. HOTTE, C.S.I.(C). Sanitary Inspector, City Health Department, Montreal.

Bulk Milk Transportation

LEON CHOINIERE, C.S.I.(C). Sanitary Inspector, Ministry of Health, Montreal.

Business Meeting

Business Meeting of the Canadian Sanitary Institute

WEDNESDAY, 2.00 p.m.

MEDICAL OFFICERS, LABORATORY AND EPIDEMIOLOGY SECTIONS

Brittany Room

Chairman: MARC BERGERON, M.D., D.P.H. Director, County Health Unit, St. Hyacinthe.

Results of Public Health Laboratory Tests

J. M. DESRANLEAU, L.Sc. Ch. Chief Bacteriologist, Division of Laboratories, Ministry of Health, Montreal.

Interpretation of Laboratory Results

GUSTAVE CHAREST, M.D., D.P.H. Epidemiologist, City Health Department, Montreal.

Bacteriology and Chemistry of Drinking Water

JACQUES ARCHAMBAULT, M.D., I.Ch., D.Sc. A. Director, Division of Laboratories, Ministry of Health, Montreal.

WEDNESDAY, 5.00 p.m.

Visit to the Virus Laboratories, Institute of Microbiology and Hygiene, University of Montreal, arranged for the members and their wives.

The visit will be followed by a reception graciously offered by the Director, Dr. ARMAND FRAPPIER.

To facilitate local arrangements and transportation, please give your name to the Registration Desk.

News Notes

Federal

The tenth meeting of the Department of National Health and Welfare's advisory committee on mental health was opened by the minister of National Health and Welfare, Hon. J. Waldo Monteith, on January 15. The sub-committees on research, alcoholism and statistics met prior to the main meeting and presented reports.

J. R. Menzies, chief, and W. R. Edmonds, public health engineering division, Department of National Health and Welfare, attended the semi-annual meeting of the advisory boards to the International Joint Commission on the control of pollution in boundary waters, held in Cincinnati, Ohio, in mid-February. Mr. Menzies is chairman of the Canadian section.

A grant of $50,000 under the National Health Program was recently approved to help defray the costs of technical equipment for the G. F. Strong Laboratory of Medical Research (formerly the B.C. Medical Research Institute), Vancouver. This laboratory became part of the faculty of medicine, University of British Columbia, on January 1 and provides space, facilities and personnel for use without charge by qualified persons who wish to undertake projects in medical research.

Dr. J. E. Gilbert, chief, mental health division, Department of National Health and Welfare, recently attended meetings of the international steering committee for World Mental Health Year in London, England, and also visited some of the mental health facilities in the London area.

The first conference of the superintendents of inspection services of the food and drug directorate, Department of National Health and Welfare, was held in Ottawa early in February under the chairmanship of Andrew Hollett, M.Sc., assistant director, inspection and enforcement services.

J. W. Willard, Ph.D., director, research and statistics division, Department of National Health and Welfare, attended meetings of the International Labour Organization's committee of experts on social security in Geneva, Switzerland, late in January.

Dr. Jean F. Webb, chief, child and maternal health division, Department of National Health and Welfare, participated in a postgraduate course on obstetrics and paediatrics for physicians and nurses held in Edmonton under the auspices of the University of Alberta from February 23–25.

Dr. Hugh R. McLaren, dental health division, Department of National Health and Welfare, was one of the key speakers at the 1959 convention of the Newfoundland Dental Society in Corner Brook at the end of January.

Miss Mildred Walker, M.A., senior nursing consultant, occupational health division, Department of National Health and Welfare, recently attended a meeting of the committee on education of the American Association of Industrial Nurses. The committee plans to write a guide on counselling practices for occupational health nurses. Earlier in February she attended a conference at Yale University where one of the discussion topics was a research study of university preparation for occupational health nurses.

British Columbia

The value of home nursing care on an organized basis has been emphasized by the increased demand for this service. By 1958, home nursing care was provided in five centers—Saanich, Powell River, Courtenay, Vernon and Kelowna. Towards the end of the year, the program was instituted in three more communities—Penticton, Ladner and Langley. This special service supplements the routine home nursing care that has been provided on a short-term basis for many years and has been found to be a worth-while step towards relieving the burden on general hospitals.

British Columbia's population under the age of 19 is now considered to be adequately immunized against poliomyelitis although vaccination will continue to be available to infants and children through child health conferences and the schools. As an extension of the provincial program, vaccination will now be available to all persons up to the age of 40. This will be channelled largely through practising physicians to whom vaccine will be provided by the Provincial Health Branch free of charge.

Saskatchewan

Dr. Robert Steele, recently of Edinburgh, Scotland, has been appointed assistant professor of social and preventive medicine at the University of Saskatchewan. Dr. Steele qualified in 1952 at the School of Medicine, Royal Colleges, Edinburgh. He was engaged

in tuberculosis work at the City Hospital, Edinburgh, and later with the Royal Army Medical Corps as medical officer in charge of the chest investigation unit, Connaught Hospital. He received his diploma in public health from the University of Edinburgh in 1956. Later he was in the university's department of public health and social medicine as a teacher and engaged in a survey of accidental injuries treated in Edinburgh hospitals for a year.

The Saskatchewan Department of Public Health is conducting a nutrition survey in the small isolated community of Pine House in northern Saskatchewan. The survey was started in the winter of 1958 when a team of doctors, a nurse, a nutritionist and a laboratory technician visited the settlement to study the diets and physical health of school children.

From the study it was found that the Metis children existed largely on a diet of bannock, fish, and tea with sugar. The children were below normal in weight and height. Because the children had been using enriched flour for some time, there was no evidence of rickets or serious anemia.

After the initial survey the children were given skim milk, vitaminized biscuits, fruit juice, dried prunes, and codliver oil. A follow-up survey will reveal the effects of the improved diet on these children.

Various instructions issued by the Hon. J. Walter Erb, minister of public health, for the guidance of communities adding fluorine to community water supplies have been consolidated in a single directive which is now available to communities. The directive, issued under the authority of the Public Health Act, deals with such items as the type of equipment which must be used, the kind of fluoride compound, the concentration which is approved, and prescribes a variety of daily, weekly, and monthly tests, with reports to the Department of Public Health.

Ontario

Health Minister M. B. Dymond recently outlined to the legislature the plan to remove 12,000 persons from mental hospitals. They would be put eventually in special infirmaries, outside the ordinary hospital setting, where they would not take up the time of highly-trained specialists. Patients to be removed from mental hospitals include 6,500 mental defectives and 5,500 other chronic, more or less hopeless patients. The plan would enable better use of intensive treatment of persons who can more readily be cured. No longer will the mental hospital be considered as an institution for custodial care, Dr. Dymond declared. "We want to try now completely to reverse the old order and begin treatment where it should begin—at the home level, we want to direct treatment toward keeping the patient in, or near his home community."

School of Hygiene, University of Toronto

The second annual refresher course in public health and preventive medicine was held at the School of Hygiene and the Hospital for Sick Children, Toronto, February 9–11. This course was a combined project of the School of Hygiene and the Division of Postgraduate Medical Education, Faculty of Medicine, University of Toronto. Dr. Jean F. Webb, Chief, Division of Child and Maternal Health, Department of National Health and Welfare, Ottawa, collaborated in the planning of the program. Physicians registering in the course numbered 57 of whom 47 were from Ontario; 4 from Nova Scotia; 2 each from New Brunswick and the United States; 1 each from British Columbia and Quebec. Most of the registrants were medical officers of health or members of the federal or provincial departments of health.

Lectures were given on "The Child Population in Canada", "Illness in Childhood", "Problems of the Public Health Nurse", "Examination of Children for Eye and Hearing Defects", "The Physical Examination of Children" and "Immunization Practices". Panel discussions covered "Problems of the Physically Handicapped Child", "Dental Public Health Programs" and "Accidents in Childhood". Dr. Jean Webb spoke on the "Future Outlook in Child Care" and on "Perinatal Health".

It is planned to present the third annual course in this series February 8–10, 1960.

New Brunswick

The annual meeting of directors and medical health officers of the New Brunswick Department of Health and Social Services was held in Fredericton on March 29 under the chairmanship of Dr. J. A. Melanson, Chief Medical Officer.

Field officers of the Rehabilitation Division of the Department attended a conference at Fredericton from January 19–23 which was arranged by the Director of the Rehabilitation Division, Mr. G. W. Crandlemire.

Nova Scotia

Mrs. Josephine MacIsaac joined the public health nursing staff in January for a period of in-service training before taking a public health nursing course at Dalhousie University next fall.

Mrs. Lois MacNeil, public health nurse in Wolfville, resigned at the end of January.

Books and Reports

INDUSTRIAL HEALTH TECHNOLOGY, *Brian Harvey, M.A., M.Sc., Assoc. I. Mech. E., and Robert Murray, B.Sc., M.B., Ch.B., D.P.H., D.I.H. Butterworth & Co. (Canada) Ltd., Toronto, 1958. 337 pp. $9.00.*

The authors, Mr. Brian Harvey, formerly H. M. District Inspector of Factories and Dr. Robert Murray, formerly H. M. Medical Inspector of Factories, have recognized the need for a concise presentation of industrial hygiene based on practical experience for the use of management and workers. They point out that most bad conditions in factories arise not from negligence or neglect but from ignorance on the part of management and workers. The book presents a broad understanding rather than a narrow detailed knowledge and the industrial executive or other interested person can readily acquaint himself with the simpler facts relating to health in connection with any process. The subject is presented in three parts: Part I, *The Causes of Industrial Disease*; Part II, *The Prevention of Industrial Disease* and Part III, *The Comfort of the Worker.* A glossary of chemical substances is a helpful supplement. There are few books available to management in this field and this practical text will be as useful in Canada as it is in Great Britain.

WELFARE SERVICES IN A CANADIAN COMMUNITY, *D. V. Donnison, B.A. University of Toronto Press, Toronto, 1958. 200 pp., $5.95.*

The Canadian community which was selected for study was Brockville, Ontario. The author is an Oxford graduate in philosophy, politics and economics. During 1953–55, he was a special lecturer in the School of Social Work, University of Toronto under the Cassidy Memorial Research Fund. He was assisted by two investigators and the project was conducted with the full cooperation of the citizens. Social services have developed in a remarkable manner during this century. These services provided both by governmental authorities and voluntary bodies have grown in a haphazard manner. The author describes the anatomy of social activity in a small city. The study will be used by students of social work and by social workers and administrators in welfare services. Students of public administration and laymen will find in it much of interest. Medical health officers, public health nurses, and hospital administrators will also appreciate this survey of welfare services in a Canadian community.

MEN, MOLDS, AND HISTORY, *Felix Marti-Ibañez, M.D., Published by MD Publications, Inc., New York. 1958, 114 pp., $3.00.*

This volume serves to introduce the unique contribution being made to medical history by Dr. Felix Marti-Ibañez, Professor and Director of the Department of Medical History, New York Medical College in his series of medico-historical books. He is known as an authority in medical history and is editor of several new journals in the field of antibiotics and of the MD Medical Newsmagazine. This volume brings together a number of previously published essays on antibiotics. Typical essays are Historical Perspectives of Antibiotics; The Next Half Century in Antibiotic Medicine; In Quest of the Broad Spectrum; Words and Research; and The Meaning of Greatness: Sir Alexander Fleming—In Memoriam.